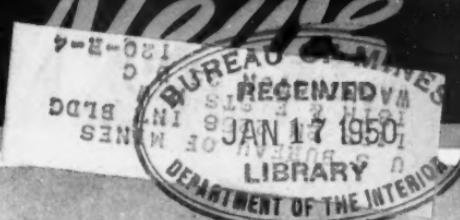


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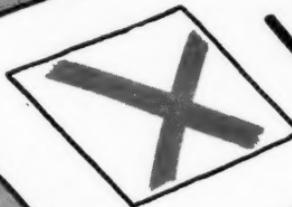
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JANUARY, 1950

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Publication Office

Los Angeles (4)—198 So. Alvarado St. Phone: DUnkirk 7-4337

Branch Offices

New York (18)—11 W. 42nd St. Joseph M. Denauithew, Manager. Phone: CHICKering 4-1969.
 Chicago (3)—1064 Peoples Gas Bldg. David Carmen, Manager. Phone WAshington 2-2589.
 Tulsa (5)—1341 South Boston. Craig Espy, Manager. Phone: 2-5726.

Lynn C. Denny, *Editor*; Edward K. Titus, *Eastern Editor*; Paul Lady, *West Coast Editor*; Lester L. Luxon, *Technical Editor*; Ted Shields, *News Editor*; Barbara Hall, *Editorial Assistant*; O. D. Hall, *Mid-Continent Editor*; Fred L. Dalton, *Art Editor*.
 Jay Jenkins, *President and Publisher*; James E. Jenkins, *Secretary-Treasurer*; Robert C. Horton, *Circulation Manager*; Gene Masters, *Research*.

January, 1950

Volume 12

Number 1

BUTANE-PROPANE News is published monthly. Copyright 1950 by Jenkins Publications, Inc., at 198 So. Alvarado St., Los Angeles 4, California. Subscription price: United States and U. S. Possessions, Canada, Mexico, Cuba, South and Central American Countries (in advance), 50c per copy, one year \$2.00; two years, \$3.50; three years, \$5.00. All other countries \$3.00 per year. By air mail \$8 per year, in U. S. only. Entered as second-class matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 8, 1879. Member of Audit Bureau of Circulation, Liquefied Petroleum Gas Assn., National Butane-Propane Assn., Society of Business Magazine Editors.

Publishers: G A S, The Magazine of the Gas Utility Industry; HANDBOOK BUTANE-PROPANE GASES; THE BOTTLED GAS MANUAL; Annual BUTANE-PROPANE News CATALOG; B-P News BULK PLANT DIRECTORY; WESTERN METALS.

LETTERS

3665-4

- **BUTANE-PROPANE News** welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

Gentlemen:

I have a water heater with input rating 190,000 Btu for propane gas used for radiant heat in an auto supply store.

Now we have propane-air in the pipelines and I have to serve them with gas, so will have to convert, or I should say enlarge holes in the three orifices.

Our gas is put in the pipes at 1500 Btu at 6" water pressure.

Can you give me the orifice size that I will drill out to get the proper flame and heat output?

T.C.B.

California

If you are drilling this orifice at the installation where there may be some unsteadiness, we suggest you start with 7/32nds, or a No. 2 drill.

If you buy an orifice of the proper size so that you do not have to do the work in the field, it could be a 15/64ths, or even up to a No. B. Actually, the orifice size figures .0452.—Ed.

Gentlemen:

In the very near future I am going to have for my small bottled gas business a 1000-gallon tank. The gas is going to be delivered in here by a truck.

I have been told that in the transfer of the liquid there could be a substantial loss for me in the amount of gas that I pump out.

Would you inform me as to how I should go about checking the liquid transfer. Are there any charts that I might be able to use?

T.F.

Ohio

Any truck delivering into a 1000-gallon tank should have a meter so that you can check the meter reading just as if it were gasoline you were purchasing.

You can also double check with your rotary gauge on your storage tank and we do not believe your loss in fuel will be excessive.—Ed.

Gentlemen:

As a new operator of an LP-Gas plant, I would like to know what would be considered a normal shrink in the handling of LP-Gas.

I have unloaded our fifth car, and though I sell on a temperature correction basis, it appears to me that there is too much difference between the actual gallons on hand as determined by the Bastian-Blessing Roto-gauges on our tanks and the gallongage as shown by our perpetual inventory record.

J.M.L.

Nebraska

Theoretically, it should be possible to account for 99 to 99½% of the LP-Gas you purchased. This does not mean the inventory will balance this close. Some losses and variations can be accounted for, but there are many factors with which you must contend to keep these losses at a minimum.

Following are some of the items which should be watched closely:

1. Usually, the LP-Gas suppliers sell on a temperature correction basis. Be sure the car received has as much fuel in it as the invoice states. Obtain outage tables for the cars in which the fuel is delivered. (The

supplier can furnish these tables.) Accurately measure the amount of fuel in the car and the temperature of fuel to determine the exact quantity in the car before starting to unload it. Be sure there are no leaks.

2. A 10,000-gallon car will contain about 37 gallons of fuel in the form of vapors when the car has been emptied of liquid and the vapor pressure reduced to "0" pressure (gauge). Every additional 15 lbs. of pressure in a 10,000-gallon car represents an additional 37 gallons of fuel in the form of vapors.

3. A good quality, guarded thermometer should be used for accurate temperature determination.

4. Rotogages must be read carefully. Recheck each reading and read the dial with your eyes at the level of the gauge. The Rotogage reads actual volume and the quantity must be corrected for temperature.

5. Unless you have a special meter on your delivery tank there is probably no device built into it to compensate for temperature variation. It is therefore necessary to correct the meter readings. Every 10° above or below 60°F requires a correction of about 1.6%. (This is for meter calibrated at 60°F.) If the temperature is below 60° the correction must be added. (See Handbook Butane-Propane Gases, Table No. 2, NGAA Standard Factors).

6. Eliminate all leaks in your storage plant or on your delivery trucks.

7. Opening the connections on hose lines represents a loss. Valve should be as close to the connections as possible to reduce losses.—Ed.

Gentlemen:

We are trying to secure some type of coin meter which could be used combined with a solenoid 115-volt A.C., 60-cycle valve.

It is our desire to secure some type of arrangement which we could use in both the sale of our bottle gas appliances and bottle gas services to our prospective customers.

Our thought of the coin meter proposition was this; that the customer could insert a given amount of money each day and by doing so could be paying for both the appliance and the fuel for a given time, and we would be assured that the payment would be met.

We have found one firm who manufactures a coin meter and an-

other who manufactures this type of valve; however, each has to be purchased separately and naturally adds to the total cost of such an arrangement. We would like to secure, if possible, one unit consisting of both the coin meter and the solenoid valve.

G.L.T.

Indiana

We do not know of any meter incorporating the electric type valve described in your letter.

The American Meter Co., New York City; Pittsburgh Equitable Meter Co., Pittsburgh, and the Sprague Meter Co., Bridgeport, Conn., make coin meters. They can be calibrated for any gas price rate desired from 25 cents to \$25 per 1000 cubic feet of gas metered.

Both use mechanical coin devices built into the meter body. Sprague advises that their meter can be placed inside the house. They also state that the coin device is costly, since the meter sells for about \$18 without the coin device and about \$40 with it.—Ed.

Gentlemen:

My company distributes undiluted propane vapor through approximately 100 miles of underground distribution system consisting mainly of 4-inch and 2-inch pipe, all of which has welded joints. House services are, for the most part, of $\frac{3}{4}$ -inch pipe with welded joints and with the service tee welded to the main. Distribution pressures range from 18-15 psi.

On occasion, we have underground leaks and because our soil is mostly sand, a considerable amount of gas will accumulate in the ground before the leak is discovered. In every such instance, we have had more than a little difficulty in exhausting this accumulation of gas from the ground.

The only thing we have been able to obtain so far that is of any use to us is an ordinary industrial vacuum cleaner which we have connected to a 2-inch well point driven into the ground. This equipment is not satisfactory from the standpoint of the

time it takes to de-contaminate the area wherein the propane gas has accumulated.

Could you advise me of any equipment that is made for exhausting propane vapor from the ground, or can you tell me what other companies might have experienced the same problem?

H.S.E.

Massachusetts

While I do not know of other instances of this kind that have been solved by LP-Gas dealers, I do learn from the Southern California Gas Co. that they have considerable trouble from escaped natural gas from their underground lines which run close to parking strips in large cities. The escaped gas damages and even kills trees and vegetation and they have found it necessary to dissipate that gas in some way.

Their practice is to use a compressor for injecting compressed air into the ground beneath the strata of gas. As this compressed air works itself back out of the ground, it brings the gas with it or dilutes it to such an extent in the ground that it ceases to be harmful. I believe they use $\frac{3}{4}$ -inch pipe for injection purposes.—Ed.

Gentlemen:

I'm writing this letter to you with hopes that you will publish it in the BUTANE-PROPANE News and let it be a letter of caution and warning to other butane-propane gas dealers and their employees.

Last summer two of our employees were loading our installation truck with a 375-gallon propane tank. We have a three-ton crane for this purpose. The chain that passes through the eyes of the tank for handling was not secured well on one end. After the tank was raised it came loose and crushed one of the men who for some unknown reason had allowed himself to get under the suspended tank. This man was rushed to the hospital and died of internal injuries 14 hours later.

I hope that other liquefied petro-

leum gas dealers will have their employees read this, and caution them against carelessness of this nature, then maybe it won't happen to any of them.

DEKALB GAS, INC.
Hugh S. Jordan

Georgia

We hope this letter will accomplish your desire to help others to be careful.—Ed.

*

Gentlemen:

We are in need of a strap chart for butane-propane truck tank of following dimensions: 47 $\frac{1}{2}$ " diameter, heads dished to 48" radius, and an overall length of 11' 10 $\frac{1}{2}$ ".

Can you supply this?

W.R.R.

Alabama

As the dimensions of most truck tanks and other vessels vary, I do not believe you will find any prepared tables that will meet your requirements. Probably your most likely source would be the manufacturer of your tank.

Usually, such tables are specially compiled to cover a given instance. It would require from five to eight hours to prepare such a table for the tank you have if it were to be calibrated for every inch of capacity.—Ed.

*

Gentlemen:

Is it possible to use natural gas or LP-Gas in cast iron melting furnaces? We refer to furnaces which might replace those fed with coal at present employed in the cast iron foundries.

I.M.F.

Italy

As far as we know the use of gas for melting cast iron has not been successfully used since the temperature required causes the iron to burn before melting, thereby reducing the carbon content, resulting in loss of weight and impaired quality.

Coal still appears to be the fuel used for this purpose. Gas is successfully used, however, in melting copper, brass and bronze.—Ed.



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COMMENT

THE WORST thing about January is that March 15 is so near!

The industry is becoming alert to the fact that the year 1950 may be looked back upon as a crucial period in the severe competitive struggle between electricity and gas beyond the mains.

The electric boys have been priming themselves for a long while to overcome the lead LP-Gas has established in the 1940's. They are aggressively selling their product, backed up by seemingly limitless funds supplied for advertising and publicity.

At last there is some possibility that the butane-propane industry will have the aid of a promotion fund of their own to combat some of the electric propaganda and more particularly to spread their own story of what gas can do in rural areas to bring farmers and small-town residents a service comparable to that served by gas utilities.

The Liquefied Petroleum Gas Assn. has started a movement to raise at least three-quarters of a million dollars to publicize LP-Gas. They expect cooperation in this program from other associations, i.e., the National Butane-Propane Assn., the Natural Gasoline Assn. of America, and the California Natural Gasoline Assn.

And they expect the money to come from manufacturers, producers, and distributors of LP-Gas who, naturally, will be the ones to reap such profit as accrues.

There never has been any appreciable sums of money spent to tell country dwellers about butane and pro-

pene. The fuel and available services have been so welcome they have spread over the land in almost unbelievable amounts and rapidity. Home owners fairly clamored for installations.

It is only natural that the peak demand should be supplied ultimately. Not the saturation point—the "clamor point."

Recognizing the magnitude of the field, the electric industry is now trying to get a share, and if LP-Gas dealers and associations don't fight for business individually and collectively, electricity will get more than its share.

If gas can hold its present sales supremacy in 1950, it's a good criterion it can continue to do so, for this year marks the beginning of real competition.

The LP-Gas promotion bandwagon is being groomed for a tour of the country. It will help you earn your bread and butter.

Maybe it would be a good idea to drop your nickel in the slot and climb aboard!

Government spending and taxes have reached such proportions that figures stagger the imagination.

Here's the way one authority tells the story of tax increases:

"During the war years, including 1941 and 1946, the federal government collected in taxes \$169.3 billion and spent some \$383.5 billion. For the eight preceding years, taxes were \$34.5 billion, expenditures \$58.6 billion. Accumulating these items for the 15 fiscal years—1933 through



1947—produces the tidy totals: taxes collected, \$248.5 billion; expenditures, \$485 billion.

"The fiscal year 1945 was the straw that humped the camel's back with a total tax take of \$47 billion and expenditures of more than \$100 billion. Yes, in that one year this nation spent more than it had spent from the inauguration of President Washington to the administration of President Hoover—140 years and including World War I."

quantity is one of our most serious handicaps."

Then Mr. Ruthenburg concluded that it will be today's inexperienced youngsters, newly recruited for selling, who will help solve these problems. These younger men will have the capacity to learn how to sell and, "supported by sound training, leadership and inspiration, we can depend upon them to 'carry the ball'."

In a recent address, Louis Ruthenburg, Servel board chairman, stated, "There is little need to dwell upon the fact that the household appliance industry has suddenly passed from the wave of an abnormal sellers' market to the trough of an equally abnormal buyers' market . . . unhappily we are ill prepared to deal with these conditions—today's salesmen and sales executives are like farmers who for nine long years have not been required to plow a furrow. Not only have they lost their skill but they find all manner of excuses for not returning to their plows . . . The deterioration of retail selling manpower as to both quality and

At the recent annual meeting of the National Safety Congress in Chicago, attending gasmen suggested that "employers dealing with the selection of new personnel employ young, healthy men with good family and educational background—those who by nature are mechanically inclined and of even temperament; that sound training of employees in the work that they are to perform should receive much attention in order to produce incentives on the parts of employees to do a good job; that sincere interest on the part of management and backing of a sound safety program are essential; that personal contact and friendship with the men on the job by management or the safety director is an important phase of accident prevention."

BEYOND THE MAINS



TELEVISION sets are a stronger and stronger competitor for the consumer's dollar for those who have gas appliances or anything else to sell these days.

Here's an authentic instance:

A family was all set to buy a new gas range. Ma had decided on exactly what make and model. Then Pa and Son came along and decided they wanted a television set. So Pa and Son won out, two to one.

Until recently we were in an era when women were determining umpteen per cent of family purchases. Now we're starting a half decade when Pa and the kids are teaming up in opposition to Ma and buying television sets.

Approximate figures on television sets produced follow:

1946	6,500
1947	175,000
1948	975,000
1949 (estimated) more than	2,500,000

A Washington official estimates that half a decade from now there will be nearly 20,000,000 television sets in use and more than 500 stations.

Television is a thoroughly American and thoroughly fair challenge to those who sell gas appliances or any other consumer product or service.

It merely points up the necessity of really selling.

There are plenty of reasons why it's more sensible now for a family to buy a new gas range or water heater or refrigerator than a television set, if they can't buy both. The appliances of the LP-Gas industry are permanent fixtures. They will be as useful 10 years from now as today, and the chances are, hardly out of date at all.

How obsolete will a television set bought today be ten years from now?

That's a fine \$64 question.

Gas appliance marketers will be wise if they take the

measure of this gargantuan new competitor, and try to figure ways they can persuade the American family to take care of its essential needs for a good kitchen to provide better food and more economy before taking care of the urge for entertainment.

So far the television blitz would appear to be a competitor of the LP-Gas appliance marketer for the consumer's dollar only if he operates within television striking distance of a large or medium sized city.

Television programs are bound to expand and improve—and rapidly. But problems of broadcasting and reception for some time will hold down ownership of sets in country areas distant from cities, particularly in mountainous regions.

From the building industry we learn that in many parts of the country there is activity in erecting medium sized hotels in suburbs. These should present opportunities for the butane-propane operator to sell commercial cooking.

An indication of migration of population from cities is had from the fact that branch retail outlets of large city stores located outside the cities are making more sales percentage-wise than main stores. This trend applies in the Northeast and probably elsewhere.

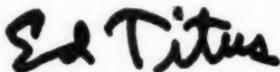
This population trend is often into the territory of the LP-Gasman.

An observer from Georgia tells us this one:

A friend of his had held a stag party at home every few months for a number of years. The customary food served was shrimp, and this man's parties became famous for the shrimp, — yum, yum — cooked with gas.

Then this man moved out beyond the mains. His wife fell for electric propaganda and insisted on a range with elements and switches.

Result — at the next stag party the shrimp were inedible.





Coberly-West Co.'s twin gins operated on LP-Gas from the supply tanks at left of picture. Each storage tank holds 1000 gals. and the fuel is fed to burners in gin drying process.

Cotton Ginning is a Load Builder

BUTANE is competing successfully with electricity in one of the most important ginning operations in California's Kern county—located in the agriculturally-rich San Joaquin valley—which this year will harvest some 275,000 acres of cotton.

Cotton, an infant industry in California, grew into a major crop just six years after the first West Coast experiments were begun during World War II. In 1948 every acre in cotton produced 700 pounds of cotton lint. In the Kern county - Bakersfield area, alone, there are 40 gins in operation—a goodly number of these employing LP-Gas during initial processing.

LP-Gas' contribution to the California cotton industry lies in a fundamental operation—the dryer,

By JAMES JOSEPH

through which wet cotton passes before ginning begins.

One large gin, the Coberly-West Co., which operates several gins near Shafter, Calif., at the hub of the cotton industry, is typical. Coberly-West first considered installing a \$10,000 natural gas main from Bakersfield, 18 miles away. But initial costs scotched the idea. Instead, the company bought two 1000-gal. storage tanks to feed its twin-gin, and two, 30-gal. Mitchell vaporizers. With these feeding its dryer burners, the company was equipped to handle cotton—wet weather or dry.

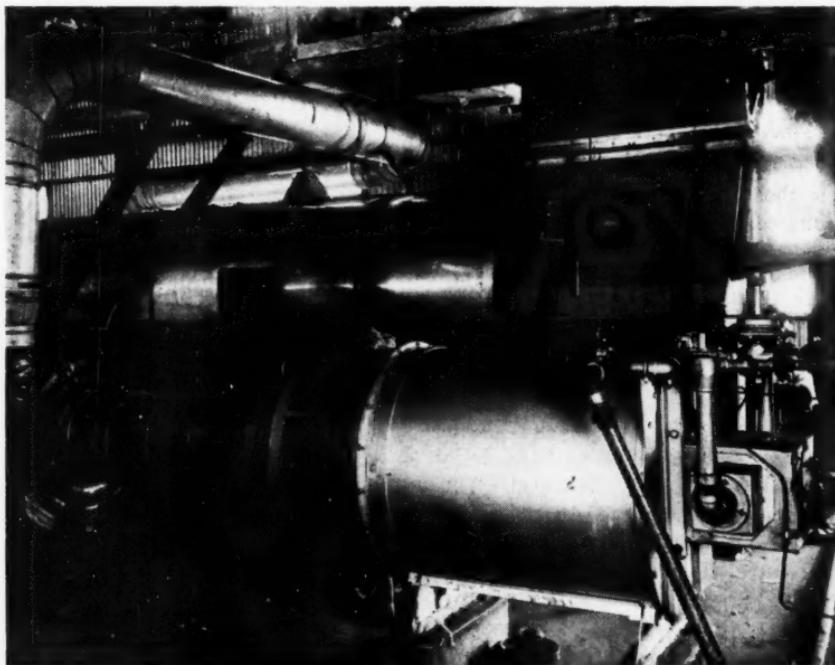
Bakern Liquid Gas Co., which now services seven gins in the

Bakersfield area, supplied the LP-Gas, which runs to 500 gallons daily when the two gins operate on a 24-hour schedule during harvest. The wet season lasts approximately five months, beginning in November, and is caused by heavy dews and fogs, as well as seasonal rains.

Cotton drying in wet-weather growing regions is a two-fold crop economy. Pre-drying burns green cotton leaves brown and prevents stains in the finished product. Growers who supply their own trailers for lint transport now find that, with drying, the

gins can handle their crops more quickly and they need to purchase fewer trailers.

The gin, on the other hand, can do away with heavy costs for storage space, which at its best—with wet cotton—was impracticable. From the grower's standpoint, pre-drying has enabled him to rush his cotton off the field and to pick earlier—unafraid now of dampness and decay in storage. Besides these advantages, the dryer does a better job of cotton cleaning—an important first step in the ginning operation.



Interior of the gin, showing LP-Gas burner hook-up (right); in center, the blower; and at rear, 16-in. conducting pipes to dryer.

The gin charges 10 cents per 100 lbs. of raw cotton dried—or about \$15 per bale—but with cotton at \$150 a ginned bale, the cost is negligible.

Trying to Raise Temperature

When Bakern Co. tackled the job of installing LP-Gas in the drying operation it was faced with a problem: how to insure drying heat of 220° F. The problem has not been fully solved as yet, although temperatures during operations reach 210° F, which seems to be the maximum obtainable with the company's present burner equipment.

Bakern found that the gin had purchased a vaporizer with which it was not too well acquainted. Main problem with the Coberly-West Co.'s vaporizer installation was an unsteady fuel pressure at the burners. If 14 ounces per square inch pressure could be maintained at the burners, temperatures could be controlled within a tolerance of 14° from the 220° normal operating temperature of the dryer. The problem was to maintain burner pressure.

Since the vaporizer didn't begin to work until storage tank pressure decreased to 30-35 lbs.—and oftentimes tank pressure reached 60 lbs.—Bakern substituted a 2-inch diameter vapor line from the vaporizer to the storage tank to replace the original $\frac{3}{4}$ -inch line. This acted as a bypass, allowing the burners to receive initial fuel supply off the top of the storage tanks until the pressure decreased to the Mitchell's operating point. Substitution of

the larger, 2-inch vapor line also speeded up the pressure drop in storage tanks, putting the vaporizer into operation that much faster.

Bakern's original gin installations a year ago did cause the company some technical difficulties such as at Coberly-West Co.—difficulties which almost any other distributor might experience with equipment unfamiliar to its technicians. But three new installations completed last summer worked faithfully, with no trouble at all. In fact, Bakern reports that it has not been required to make a single service call on any of its newer installations.

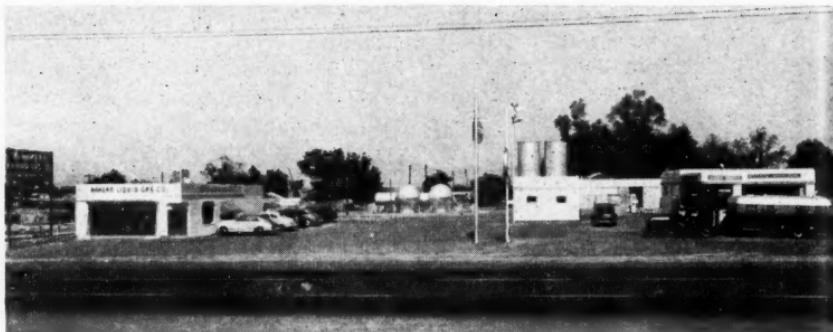
Fast Ginning

With the aid of two butane-fueled Murray dryers—and their adjacent blowers, Coberly-West can gin 245 bales in its twin-gin, both working off side-by-side, 1000-gal. LP-Gas tanks in a single 24-hour ginning run during peak wet weather rush season. That's an output of 122,500 lbs. of cotton.

But ginning operations aren't Bakern Co.'s mainstay. Domestic fuel sales and industrial drilling, both water and oil, plus large agricultural orders—tractors and stationary engines for irrigation—make up the bulk of its business that draws from the company's 22,000 gal.-capacity storage tanks. Its biggest tank holds 7500 gals. in storage. A second tank's capacity is 3600 gals. It also draws from two 5500 gal. tanks. Its 6 delivery trucks (average capacity, 1500 gals.), and two service trucks keep a staff of 16 employes busy.

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Offices and storage plant of Bakern Liquid Gas Co., Bakersfield, Calif.

J. W. Guffey, Bakern's manager, and Mrs. Gussie Spears, the concern's president, have switched emphasis to larger domestic and industrial users in their area because distances are great, and short, frequent hauls uneconomic-al. To encourage purchase of 250-gal., and upward, tanks, the company has absorbed the recent price rise for tanks of 250, 500, and 1000-gal. capacity and has reduced the deposit fee.

To discourage use of the 150-gal. size, Bakern has passed on tank price increases to its customers for this size and has even increased the deposit fee. Another inducement has been a 1-cent per gal. price reduction on purchases of 500 gallons or more—which is good sales argument for larger tanks.

With the recent increase in LP-Gas prices, Bakern's service representative, Roy Merriman, says that stationary engines which have been frequent users of LP-Gas in the irrigated San Joaquin valley, are finding it increasingly less

economical to install LP-Gas. This is especially true in a growing area like Kern county where power lines are extending into hitherto unserviced areas.

In February, Bakern Liquid Gas Co. (Bakern stands for Bakersfield and Kern county) celebrated its 10th year in the LP-Gas business. It carries a full line of home appliances, displayed in a sparkling, sales-wise showroom.

As an extra load balancer, Bakern is increasing its LP-Gas portable irrigation engine clients. With increasing use of irrigation in the once-arid San Joaquin (now the nation's No. 1 cotton county—and fourth U. S. county for value of its agriculture), Bakern has tackled an extra load field that has all the ear-marks for expansion.

Liquid fertilizer has brought into play the back pump for rotational use of tailwater in irrigated fields. With a portable, LP-Gas fueled engine at the field's low-point, or sump hole, standing water is removed—crop spoilage negated.

10-YEAR FORECAST

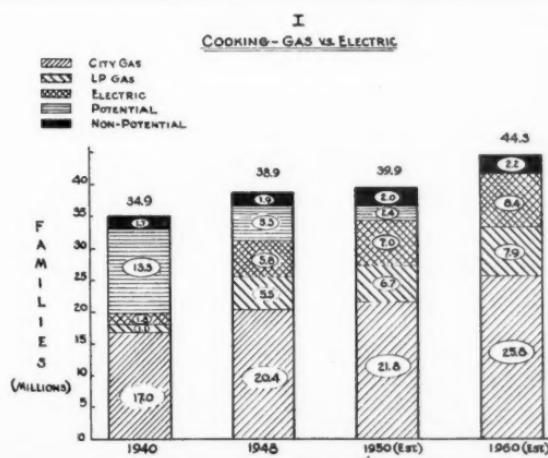
"THE lush new business prospects are running out, and the future will be marked by keener intra-industry competition and business consolidation." That is the opinion of A. E. Bone, Suburban Propane Gas Corp., Whippny, N. J., and he stated it to members of the North Eastern LPGA meeting recently.

The old arguments against coal, kerosene, and wood as fuels are dead ducks for selling LP-Gas today, he said—the only real competition is between gas and electricity. "Our sales story must convince customers that they should choose gas in the first place — or, second best, that they should switch from electric appliances to gas," Mr. Bone pointed out, in explaining the efforts that will be necessary for dealers to expend in order to stay in business in a period which will be characterized by the leveling

off of the past phenomenal growth of the LP-Gas industry and, correspondingly, of domestic sales.

His predictions for the future of LP-Gas included an estimate that sales may total 2,600,000,000 gals. in 1960, and that average use per customer will run as high as 31.5 gals. per month, compared with the present total, 23.3 gals. Other projections by Mr. Bone of sales and competitive inter-industry data are contained in the accompanying charts.

Chart I shows percentage increase in sales that Mr. Bone sees for LP-Gas in the next 10 years. He believes that to compete with electricity, dealers will have to offer "fully automatic" gas service.



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News

II
NEW CUSTOMER POTENTIALS

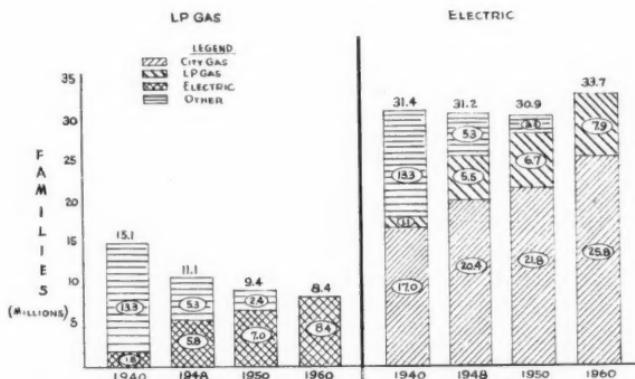
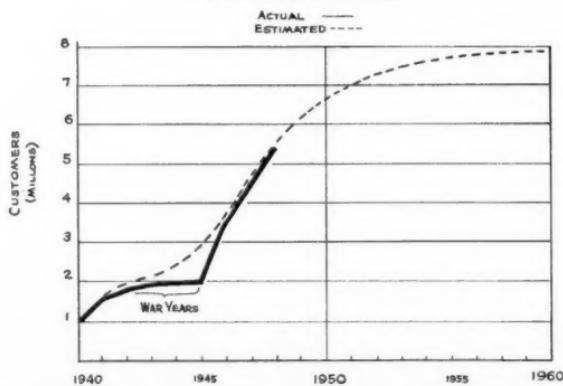


Chart 2 shows estimation of how more inefficient fuels (coal, oil, wood) will disappear from the competitive picture, leaving gas and electricity to slug it out with each other. Note gas' potential slowly shrinking, until, by 1960, new customers must come from among electric users.

Rapid customer growth of the late '40s is illustrated on Chart 3. The author sees LP-Gas continuing its speedy rise until 1960, when a gradual leveling off will occur. Mr. Bone believes that there will be 8 million butane and propane users by that time—if the gigantic promotional effort of electric utilities is matched by LP-Gasmens.

III
LPGAS CUSTOMER GROWTH



III
TREND IN USE PER CUSTOMER
(GALLONS PER MONTH)

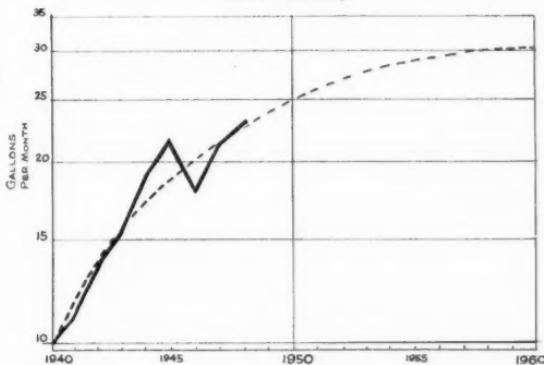
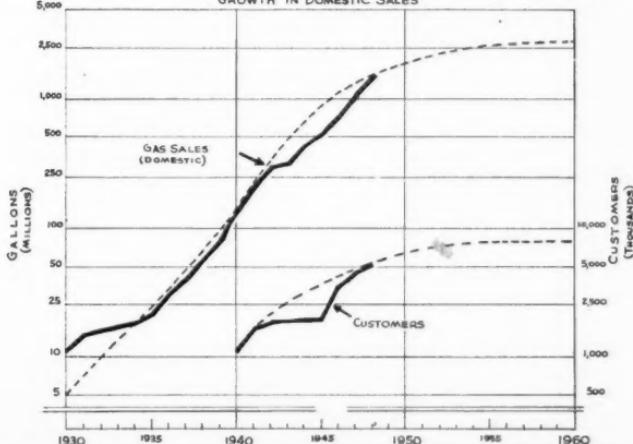


Chart 4 shows the author's estimate of how the trend in use of LP-Gas per customer will go between now and 1960. The present average is about 23.3 gal. per month—it will be about 31 gal. by the future date. Mr. Bone points out how the electric promotional material unfairly claims that the average family uses 49 lb. of LP-Gas each month for cooking, as against the LP-Gas industry's claims of 33 lbs. per month.

Growth predicted for annual sales of gas (in gallons) is shown in Chart 5. Mr. Bone made his predictions for the future from all available data, and admits that unforeseen circumstances and unpredictable forces might alter them in a few instances. He was certain of one thing: the net cost to customer for electrical appliances will be much more than for gas appliances.

IV
GROWTH IN DOMESTIC SALES





ERNEST FANNIN



PAUL FANNIN

The accompanying pictures and captions tell an interesting story of the extreme precautions taken by the Fannin brothers to make their operations safe.

The text covers their plans for installing meters on domestic systems, maneuvering to avoid losses on the fringe areas of utility mains, the establishment of branch offices and dealer outlets, and an estimate of the standards the industry must attain to hold its supremacy in a competitive market.

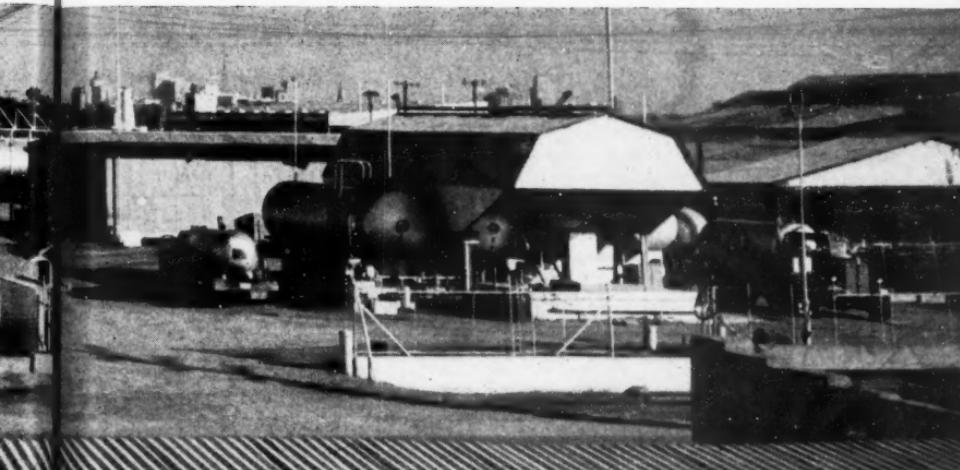
High Standards

THE ultimate success of the liquefied petroleum gas industry in the United States lies in elevating its services and consumer relations to the standards of the gas utilities!

Such is the recently expressed opinion of Ernest Fannin, president of Fannin Gas & Equipment Co., Phoenix, Ariz.

"Our industry must raise its standards and standardize its installation and service practices so that users of our fuel will receive a gas service completely comparable to that given consumers in the large cities.

"Such a goal is easily within the



Carne Best Competitive Weapon

range of attainment by all dealers," Mr. Fannin continued. "All it takes is the earnest and honest desire to give the customer what that customer thinks he is buying when he signs a contract for gas, based upon what he knows utility prac-

tices to be. The equipment for transporting and storing the gas is of the highest order; the fuel, itself, is superior to any other on the market, and its utilization can be made safe and thoroughly satisfactory."

Above: The Fannin layout. At the left is the main store building and warehouse. At the extreme right is the mixture product storage system, which has four 8500-gal. storage tanks and one that is approximately 4000 gals. The canopy over the two center tanks was built to shade them from the extreme heat. The Fannins later found it unnec-

essary to protect their bulk storage tanks in this way. In the center is a canopy-type shed which covers the grease pit and wash rack. Immediately behind this canopy is the propane storage consisting of five 23,600-gal. storage tanks. The small spherical tank on the left has a capacity of approximately 1800 gals. and is used in connection with the bottle filling plant.

Mr. Fannin believes that too many dealers think of themselves as merchandisers instead of service companies. He wants them to raise their sights and shoot for the high mark of an unswerving consideration of the needs and accommodations of those who pay the freight. And Mr. Fannin—Ernest to all who know him—has a breadth of experience and observation upon which to base judgment.

A Family Affair

Ernest, and his brother Paul, own one of the largest distributing companies in the nation — with four branch plants in addition to their Phoenix headquarters, and dealers who cover every hamlet and irrigated valley in the state of Arizona.

"It's not only that LP-Gas dealers must come to think of themselves as small utilities in order to prosper—they must give utility service of the highest caliber or they will lose out all together in the fierce competition with the electric industry that menaces them on every side. The electric boys really give high class service and we must match them, day by day, if we are to hold our present enviable lead and hope to expand."

Ernest believes that one sound method to improve customer satisfaction is to meter the gas to every household served. The public understands meters and has faith in them. They will pay high bills without a murmur when a meter records the usage, whereas they sometimes feel skeptical of fuel deliveries that are charged for on a gallonage or weight basis.

While the Fannin boys are strongly in favor of meters for all their systems, it is not economically possible to change over many at a time because of the tremendous investment involved. For the meter and its installation, the cost comes to about \$35. That would mean an investment of upwards of half a million dollars for Fannin's more than 9000 installations.

Not only is customer satisfaction involved in metering systems, but there is large savings to the dealer

Close-up of propane storage. Note the protection bumpers used on the corners and ends; also the vent pipes on each relief valve and the 75-ft. vent stack used to vent all of the product which has to be dissipated when any manifolding, pump or meter is repaired. The Fannins believe it is an unsafe practice to blow gas off at ground level.

Close-up of hose rack. The rack keeps the hose clean and facilitates storage when not in use. It eliminates the possibility of dirt and foreign matter getting into the couplings. The steel pipe structure at the left of the rack is set in four feet of concrete and is so constructed that in the event a truck should drive away with the hose attached, it would break the Acme quick thread coupling without damage to the pipe, fittings, or valves. The Fannins have standardized all six of their loading racks at the Phoenix plant so that if there should be an accident a man remaining to close off the valves would not get confused. Note the chock blocks in the foreground. These are used to chock the rear wheels while a truck is being loaded, regardless of the fact that all loading locations are level.

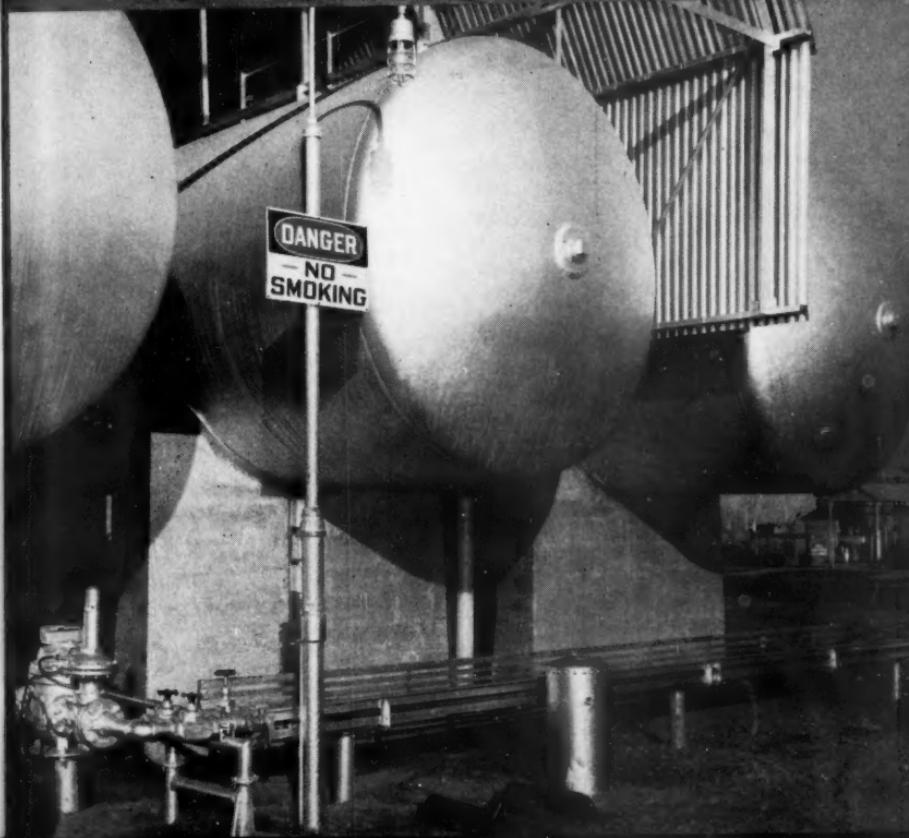
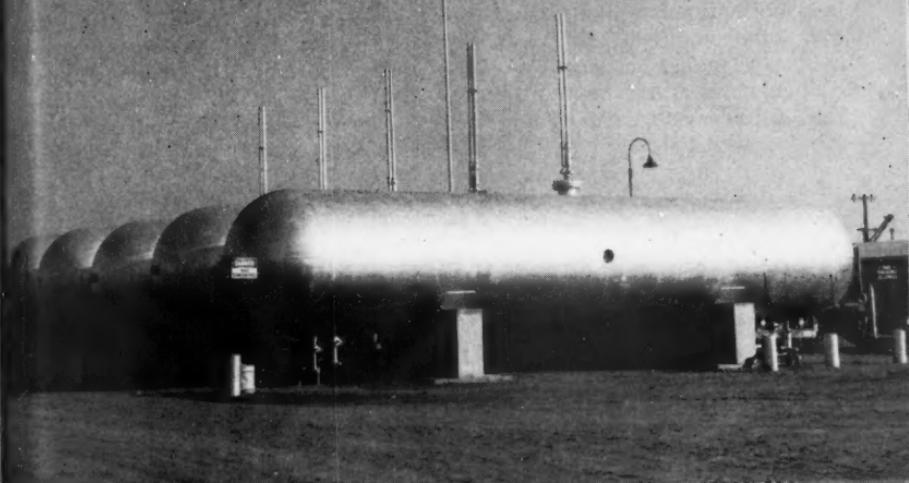
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News



in bookkeeping and billing practices over other methods. Double postcards are mailed out monthly, the customer reads the meter, marks the card and returns it by mail. In the accounting department the customer's reading is transferred to another postcard upon which is entered the customer's name, the amount of fuel used since last billing, the contract price, and the total amount due. This second card, constituting the current statement, goes to the customer under a one cent stamp. When payment is made, the stub is returned and credit entered on the master cards.

This system requires a minimum of record-keeping and expense and can be consummated on regular monthly schedules that are beneficial to user and dealer, alike.

Adds to Total Storage Capacity

One of the largest and most important benefits to a dealer from the use of metered systems is that the dealer can install large capacity tanks without customer opposition, can fill them at opportune seasons and thus greatly add to the dealer's total fuel storage capacity, as well as having the opportunity to fill tanks less frequently and at less cost per fill.

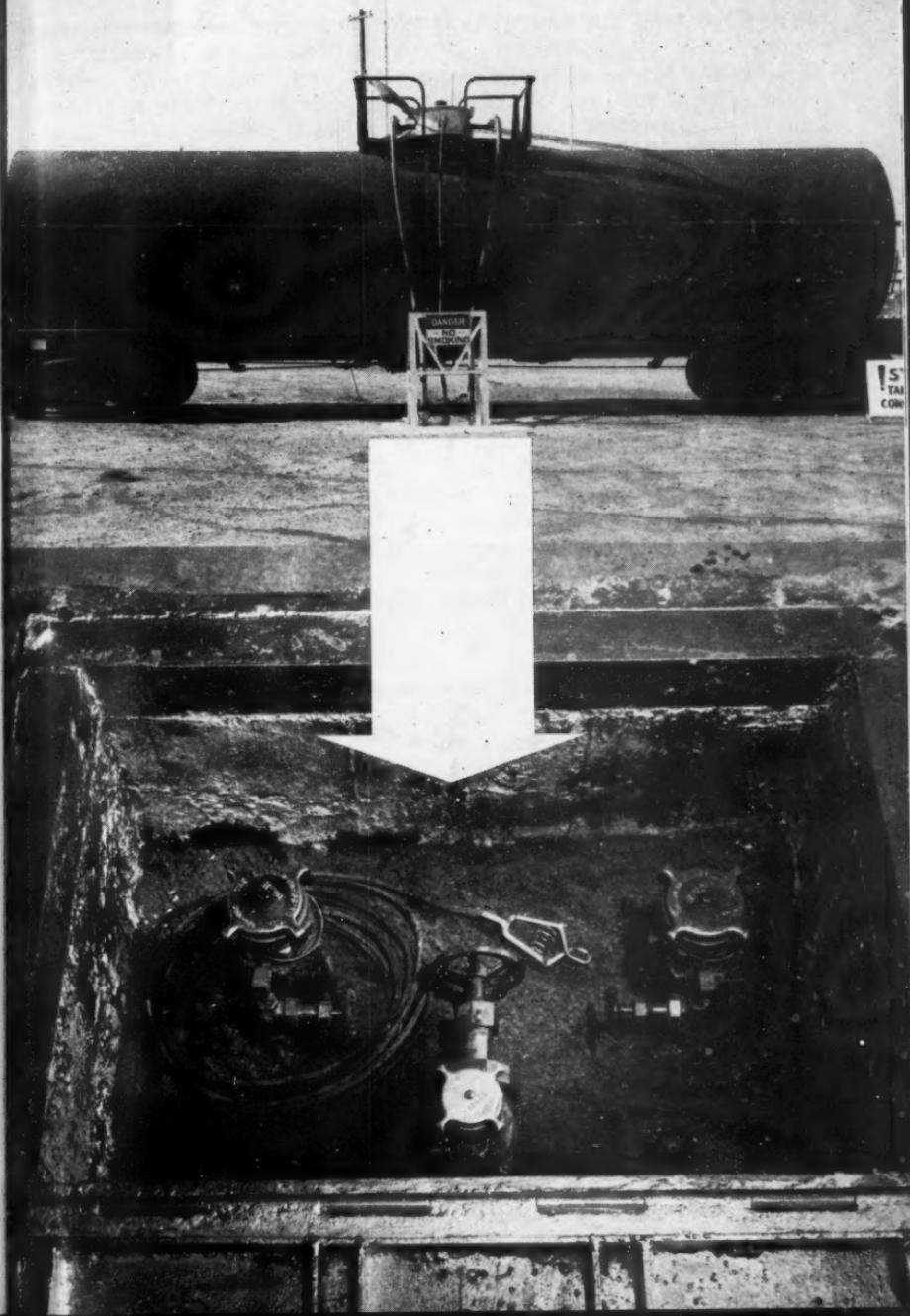
Meters are being installed on all new installations (on lease agreements only) except in areas close to possible extension of natural gas mains where systems may not remain long enough to justify the expense.

Incidentally, the Fannin boys are not enthusiastic over making any installations in districts which may be served soon with natural gas.

Although they receive excellent cooperation from the combination gas and electric utility company in Phoenix (Central Arizona Light & Power) as regards contemplated extension of mains, there is much grief to serving such customers. The families so situated often wish to get along with cheap, small ap-

Above: Railroad car being unloaded with hose attached and the protecting stand in place in Fannin's underground unloading compartment. The protecting guard is removable and is constructed of 3 in. x $\frac{3}{8}$ in. angle iron with handles and is carried away by two men when not in use. The rack is designed in such a manner that it is very easy for the employees to attach or detach the hose by hand with the large $3\frac{1}{4}$ -in. Acme couplings.

Below: Close-up of underground unloading compartment with the steel plate door open showing the two 3-in. liquid connections and the 2-in. vapor return connection. The 2-in. vapor return connection uses a 300-lb. working pressure globe valve. The two 3-in. liquid lines are equipped with double-check Rego couplings. Note the small, $\frac{1}{4}$ -in. valves which are shown on each of the 3-in. liquid lines. Note that the double-checks are tapped just above the top check. After the tank car has been completely unloaded the valve is turned off at the tank car and the two bleeder valves are opened. The vapor or liquid, which is in the unloading hose, is then dissipated through one of the 75-ft. vent pipes. When unloading is completed, the steel plate cover is placed back in position, which provides a level spot in the yard over which even 75,000-lb. trucks can drive.



pliances, pending the time of fuel change; they oppose payment of installation charges, and often kick on the price of fuel. It requires the same size tanks and the same equipment to make a temporary installation as if the system were to be used a lifetime, and eventually (all too soon) a disconnect order comes along, requiring removal of tank, piping, etc.

Ernest Fannin feels that "saving the fringe areas for gas" should be based upon an agreement with utilities which would better insure the LP-Gas dealer against loss. One way would be for the utility to pay the dealer a stipulated sum of money—sufficient to cover installation and removal costs and salesmen's commissions—for every customer it takes over when utility mains are extended to the LP-Gas users.

One Installation Would Do

To justify such cost to the utility, installations should be made to standardized specifications to meet the utility requirements so that piping, at least, will not have to (1) be removed by the dealer and (2) replaced by the utility. The dealer could afford to make a permanent installation, based on utility requirements, if he knew he would later receive compensation for it.

The Central Arizona Light & Power Co. not only cooperates now by telling Fannin's where they plan to run their mains in the future, but actually acts as a Fannin dealer in Gila Bend, where they have made many LP-Gas installations

for domestic and commercial uses, irrigation pumping plants, etc.

But even with friendly cooperation by utilities, there will always be a loss to dealers, Ernest thinks, for when mains are extended the dealers lose so many customers at one time that hundreds of tanks are idled and a huge volume of gas sales shut off. His firm lost 3000 customers in the last year from main extensions around Phoenix. It is beside the point that they are rapidly reinstalling this equipment in outlying installations. They argue they would have gotten this new business, anyway.

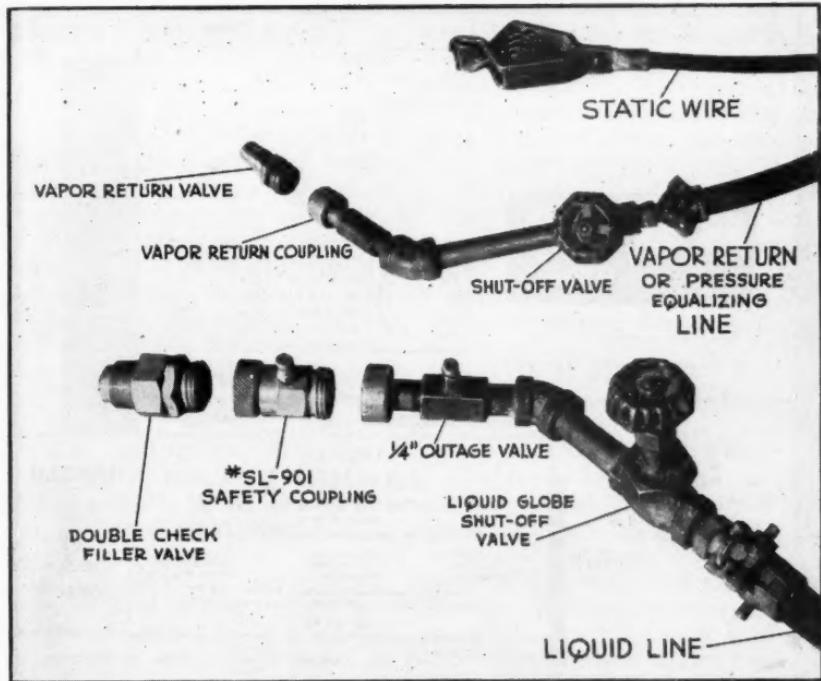
Therefore, the Fannins think there are only three judicious ways to become involved in fringe area installations:

1. Arrangement with the utility for adequate reimbursement when mains are extended.

2. Make fringe installations only when it is known that a long period of service will ensue before the utility takes over.

3. Sell system to users at an immediate, satisfactory profit, so that whatever future gas sales occur will bring a profit.

Distributing LP-Gas and appliances through their branch offices and dealer outlets over an entire state is the Paul Bunyan-size job that Fannins perform. And when such operations reach a cash volume of \$4,000,000 per year, it takes an enormous office force and servicing personnel to keep business within the narrow groove of exact accuracy, while not forgetting the need for extreme diplomacy in customer relations.



The liquid line, vapor line and static wire as they are equipped on Fannin's heavy trucks. On the liquid line is the standard R-10 outage valve installed in a $\frac{3}{4}$ -in. brass coupling between liquid shutoff valve and quick coupling. This is used for bleeding off the liquid or vapors after the tank has been filled and the liquid hose valve turned off. The #SL-901 safety coupling has a one-way check internally. The double check filler valve is fitted into the tank. Fannin's instructions to all employees are that the Selwyn-Landers 901 coupling must remain on the hose at all times when tanks are filled with this truck. In their opinion, it is one of the finest safety devices ever devised. They carry an extra coupling on each truck. They have been using this piece of equipment for approximately one year and have never found it necessary to go off and leave a hose attached to a tank. If the driver, after completing the filling of a tank and before removing his hose, will loosen the knurled nut on outage valve incorporated in the SL-901 coupling and dissipate the gas between automatic check fill valve located on tank and hand operated globe valve on liquid hose, then in event automatic check valve does not function properly in tank, liquid will continue to appear at bleeder valve. The operator should then close bleeder valve and leave the SL-901 coupling attached to tank, fit the cap ordinarily used on filler valve to the SL-901 coupling until repairmen experienced on this equipment can go out and do the job.

DATE OF READING _____ 19____



Fill in, above, the exact numbers as they appear on your meter.

Please cooperate. Fill in and mail this card today.

DO NOT WRITE
IN THIS SPACE

S.T.

M.L.



Draw line from center to number the arrow on your gauge points to.



IF YOU HAVE TWO TANKS
FILL OUT BOTH DIALS ABOVE

FANNIN'S
Gas & Equipment Co.
P. O. Box 1979
Phoenix, Arizona

RETURN POSTAGE
GUARANTEED

THIS SIDE

FANNIN'S
GAS & EQUIPMENT CO.

PHONE 4-1181

Gen'l Office: 1891 W. Roosevelt, P.O. Box 1979, Phoenix, Arizona

P.O. BOX 31
WICKENBORG
PHONE 570

P.O. BOX 888
CASA GRANDE
PHONE 570

P.O. BOX 28
PRESCOTT
PHONE 704

THIS BILL IS DUE UPON RECEIPT AND WILL BE
CONSIDERED PAST DUE 10 DAYS AFTER MAILING DATE

SERVICE TO

METER READING	USE	AMOUNT*	AGREE- MENT CHG.	TOTAL	TOTAL
PRESENT	LAST				

BU-GAS



SERVICE TO

PLEASE ENCLOSE
THIS STUB
IF PAID
BY MAIL

*INCLUDES TAX

PLEASE BRING ENTIRE CARD
WHEN PAYING AT THE OFFICE

This double postcard is mailed monthly from Fannin's. The customer reads the meter, indicates the reading, and mails the return card. The card below is held in the accounting department. On it is entered the customer's name, the amount of fuel used since the last billing, the contract price, and the total payment due. The card constitutes a customer's statement and goes to the customer each month for a one-cent stamp. The stub of this card is returned with payment and credit is then entered on the master cards. The Fannins insist that metering results in customer satisfaction and a saving in bookkeeping and billing. However, because of the high initial investment they have not yet made the changeover for all of the systems.

Management becomes probably the most important function.

It all seems to be happily amalgamated into a smooth-working, machine-like, gigantic operation in the case of the Fannin Gas & Equipment Co. Surrounded by the garden-like Salt River valley, where crops range from cotton and alfalfa to oranges and vegetables, Fannin's has grown and prospered with the state's overall development. Today, 19 years after Ernest and Paul set up a penny-ante LP-Gas business in one corner of their father's long-established hardware store, their sideline has grown to the size of a "project" and the former prosperous hardware business has become only a memory as the sale of gas and appliances outdistanced it to the point of oblivion.

But even if it had been retained, it would now be the sideline and dwarfed by the huge gas storage tanks, stock rooms, and yards of

There are 22 delivery trucks at the Phoenix plant. Note the extra heavy guard protecting the fittings from any damage, also the chock blocks in their rack on the rear fenders. They are chained to the truck and are available at all times.

the present concern. From the first day of operation, the Fannin boys have been loyal to their first suppliers, obtaining their fuel from the Standard Oil Co. of California and all tanks—large and small—from American Pipe & Steel Corp., Alhambra, Calif.

Carefully enclosed by high wire fences and protected by every proven safety device, many of them originating in the minds of the Fannin brothers, storage totaling 75,000 gallons insures supplies to dealers, branches and customers even during winter peak demands.

Heating Load Is Heavy

The space heating load is still the heaviest of the year for Fannin's, although the hundreds of farm tractors being converted to burn LP-Gas may help to balance it soon. However, tractors work year-round in Arizona to a larger extent than in most states because the mild climate is conducive to the development of many winter crops. So they are not the panacea needed for complete load balance. Farm applications of LP-Gas include cotton picking, orchard and row crop cultivation, alfalfa drying, and irrigation pumping.

Ernest and Paul Fannin still think of safety first—like any good dealer should. Their plants are provided with every possible safeguard and weekly safety meetings keep employees well informed. They place customer service ahead of personal gain; they give their dealers a fair break. Their problems are the same as the little fellow's—electric competition; other dealer competition; customer complaints;



supply and demand; cost of doing business; personnel training, and plenty of trouble-shooting.

The home plant at Phoenix is the largest of four and there the general offices are located. Five acres are necessary to accommodate buildings, storage tanks, transports and delivery trucks, shops, experiment and research facilities, and unloading areas.

Appliance Sales 50% of Total

The merchandising end of the business, representing in sales of appliances and equipment about 50% of the total business (the balance being gas sales) would be highly complicated were it not for an almost flawless system of record-keeping and individual responsibility of department heads for the work under their supervision.

Among the principal divisions of business management, other than overall functions performed by Ernest Fannin as president of the company, and Paul Fannin, vice president, who supervise all branches of the organization, with C. R. Franks as their assistant, are engineering and dealer coordination, handled by H. P. Gimple; retail sales, under the direction of C. H. Sessions; office management (and secretary), headed by Frank C. Forest; and C. C. Baldwin, plant superintendent.

Their own shops build or rebuild all equipment upon which changes are necessary. Everything from tractor conversions to painting tanks is a part of every-day routine in the plant and nothing leaves the yards that is not inspected for

perfection of operation and outward appearance.

Where Branches Are Located

Branch offices are located at Wickenburg, under the management of Paul Hannon; at Casa Grande with J. B. Brown in charge; at Prescott with Charles J. Baird, Jr., directing all operations; and at Parker. The dealer setup includes representatives in 12 other towns and cities throughout Arizona, so probably there is no one in the state who has not seen a Fannin sign displayed on store fronts or on trucks skimming over the highways or making a fuel dump at some ranch. It all adds up to first class publicity and good public relations.

Ernest Fannin has had national recognition for many years through his activities with the Liquefied Petroleum Gas Assn. He has served as vice president and president of that organization and is now on its board of directors, representing the state of Arizona.

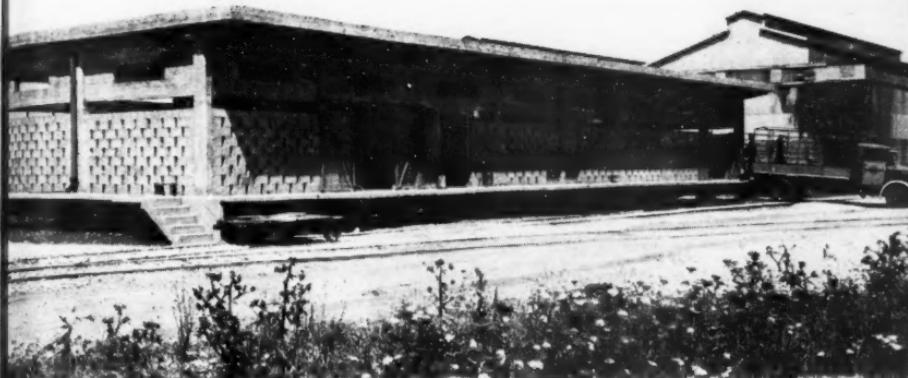
Butane Drivers Receive Safety Awards

Safety awards were presented to 44 drivers of the Fowler Butane Gas Co., Hattiesburg, Miss., in December at a company safety meeting and dinner.

The drivers were awarded a certificate and pin for having no accidents in periods ranging from one to five years.

Employes from the following districts were present at the meeting: Hattiesburg, Laurel, Waynesboro, Meridian, Quitman, Prentiss and Columbia.

out-



Israel Has Domestic Market

BOTTLING operations to fill Israel's present demand of 1000 5-gallon bottles daily are handled by the refineries, including testing of bottles, repair of valves, painting, etc. The marketing company collects the empties from central depots in Jerusalem, Tel-Aviv, Haifa and the Settlements, and delivers directly to the refineries. Both road and rail transport are employed. There is at present no bulk storage depot for LP-Gas other than at the refineries, although with the increase in the number of customers such installations are being considered.

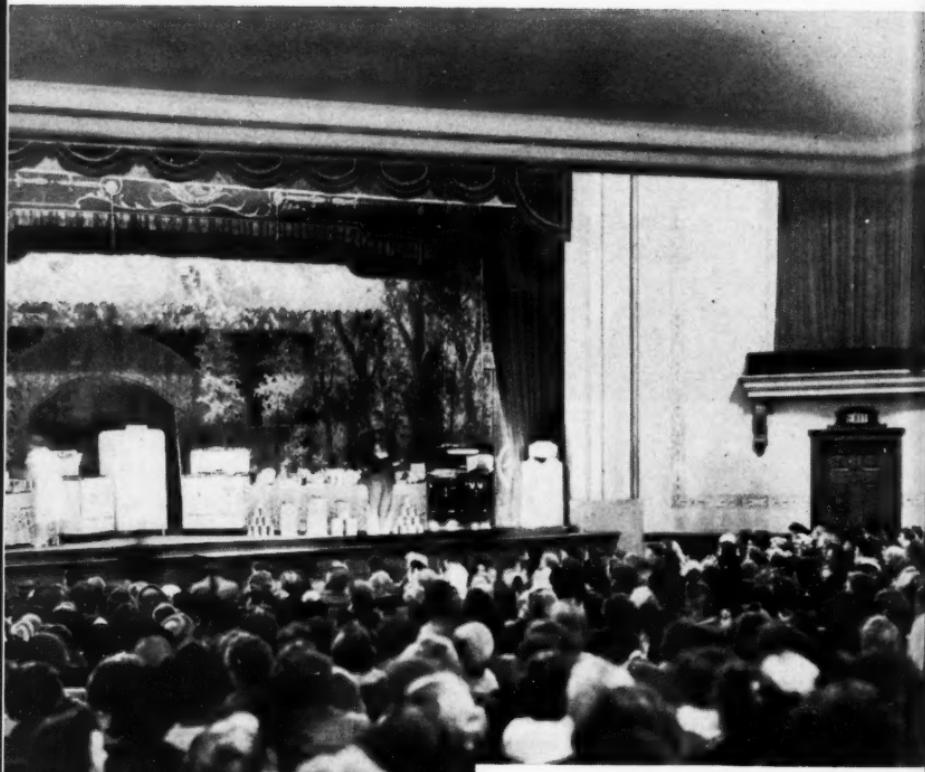
The actual bottling plant in the refinery is entirely manually operated, having been built in a time of emergency when mechanized equipment was unavailable. With six filling points it is found to cope adequately with the country's requirements.

The LP-Gas market in Israel is almost wholly domestic, only a few large commercial bottles being handled. Under local conditions, in the absence of bulk LP-Gas transport, any factory requiring more than a very small quantity of fuel automatically chooses fuel oil or gas oil. The price of a 5-gal bottle is about one Israel pound (\$2.80).

The Haifa plant recently resumed operations after an 18-month shutdown caused by the decision of the Arab Nations, including Iraq and Egypt (allied in the Palestine war last year), to block crude from reaching Israel.

The plant is now operating at about $\frac{1}{4}$ capacity with shipments of Venezuela crude.

Bottling plant of Consolidated Refineries, Ltd., Haifa, Israel.



Here in the Civic Memorial building at Platteville, Wis., H. J. Helmer piloted his "give-away" cooking school through two successful afternoons. On succeeding pages Mr. Helmer presents his solution of the cooking school problems in a series of "Do's and Dont's."

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OVERFLOW CROWDS ATTEND TWO-DAY COOKING SCHOOL

TWO RANGES HEAD \$1000 PRIZE LIST

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PLATTEVILLE, WIS., Nov. 20—Grant county women turned out over 2000 strong in the Civic Memorial building, Nov. 16-17, to make the Badger Gas Products' cooking school one of the most talked of gatherings in Platteville history.

Lucky winners took home \$1000 worth of prizes, including two beautiful gas ranges, free food, including two 15-lb hams, and a new batch of recipes.

Almost everyone got into the act—local merchants donated \$1000 worth of prizes, local groceries furnished all the food cooked in the demonstrations. Badger Gas Products, in addition to its two prize ranges, contributed some interesting LP-Gas displays, and the audience achieved a high degree of participation in the two-day event. The cooking demonstrations were given by Mrs. Maxine Norris, home service and home economics department, Chambers Range Co.

That there would be a full house for the school was assured by news stories in the **Platteville Journal** and **Grant County News** two weeks previous to the program, a news story and a full-page ad a week later in the **Journal**, and promotional stories in the two papers immediately prior to the actual demonstrations.

Harris J. Helmer, of Badger Gas, left no detail undone in assuring the

success of the cooking school. Local merchants were canvassed for prize donations, and 40 of them allotted merchandise to be given as prizes during the sessions.

Badger Gas gave away a Chambers range on each day of the program, and all the food cooked (sample menu: rib roast, brown potatoes, carrots, Spanish green beans, and apple crisp) was given to members of the audience. Tickets were necessary for admission to the school, and were distributed free through Badger Gas and through the participating retail merchants of Platteville.

Badger Gas overlooked no promotional opportunities. On stage with the ranges to be used in the demonstration were a Servel refrigerator, and several LP-Gas tanks—connected for operation to give the audience a clear view of what LP-Gas can do for kitchen improvement.

"We feel that we have already been repaid many times for our sponsorship of the cooking school," Mr. Helmer said. "This proved to be one of the finest promotions for new business that we have ever undertaken." Within two days of the program, 14 new gas ranges were sold—and the sales were directly traceable to the cooking demonstrations.

Badger Gas Products has about 2000 retail customers within a 15-mile radius surrounding Platteville, where the company's plant is located. In addition, Badger has 50 good dealers in the southwestern part of the state, all within 75 miles of Platteville.

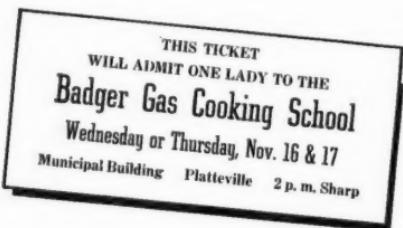


COOKING SCHOOL TOP

HOW TO PROMOTE AND OPERATE

DO

(1) Print three times as many tickets as your house will hold. We found that people asked for tickets every time they saw one of our displays in local stores—some were lost, given to children to play bank, and taken by persons who did not attend the program. We printed and distributed 5500 tickets and had a total audience of 2020.



(2) Print three lines on the back of the tickets for names and addresses. This will give you a very good mailing list.

(3) Display on the stage all prizes to be given away. Get the prizes from local merchants at least a week ahead. You can display them in your store as a drawing card.

(4) Run your full-page ad in the local paper seven days before the school is held. Small news stories can be run three weeks in advance. (The two newspapers available to Mr. Helmer were both weeklies.—Editor.)

(5) Get out your big banner, "Get Your Tickets Here," and your tickets at the same time. Fifty at a time is plenty of tickets for each merchant.

(6) Start your show on time; two hours is plenty of time to hold them. Have the people out by 4 to 4:15. Your show will draw better in the afternoon than evening.

(7) Be sure that your cook is a good saleswoman as well as a cook.

Mr. Helmer of Badger Gas, Platteville, Wis., is secretary of the Wisconsin LP-Gas Assn. Here is his presentation of the "Do's" and "Don'ts" he evolved after his recent experience in the successful conduct of a cooking school.—Editor.

(8) We believe that the best month for these schools is November—the holiday season when housewives are doing a lot of cooking and looking for food ideas.



(9) Open your doors early. One and one-half hours before your show the people will be there. Don't keep them outside.

(10) Give them the idea that this is just a family party with lots of free prizes for everybody and split up your program so that every once in a while you give away something free.

ERA COOKING SCHOOL—By H. J. Helmer

DON'T

(1) Don't crowd yourself for time. Take three weeks to get over the idea. Start slow with your ads and build up as the days go by.

(2) Get your signs in the store windows. If they say, "Just leave the sign here, we will put it in the window," don't leave it. Do it yourself then and there.

(3) Don't ask your merchants for prizes until word about the school has gotten around and housewives are inquiring about tickets, then hit them for free prizes—tell them what prize their next door neighbor is giving away—and you'll get what you want.

(4) Don't skimp on your ads.

(5) Don't cook on just one stove during the demonstration. Have two stoves going at the same time—cook a big ham in one and the meal in the other. If you have a two-oven stove, cook four meals.

(6) Don't give them the idea that you are trying to sell them something.

(7) Don't take the food home after it has been cooked. Let your customers eat it. You won't be hungry, anyway.

(8) Don't try to "pitch" your range and products too long at one time.

BADGER GAS COOKING SCHOOL

November 17, 1950

Sponsored by Badger Gas and Products Co. Contested by Maxine Stevens, Home Service Dinner, Chas. Mrs.



MENU

Range No. 1

Oven

Turkey, Roasted Potatoes,
Carrots and parsnips,
Diced Apples and Cinnamon
Custard Pudding, 12 minutes of gas.

Betty Crocker Chiffon Cake (12 minutes of gas, 15 minutes roasting time)

Thermowell Constant Heat with Vegetables (12 minutes of gas).

Thermobaker Nuts

Roller Omelets and Eggs

Griddle Pancakes

Range No. 2

Oven

12 lb. Ham, 1½ lbs. sliced hamsteak, 12 min.

Thermowell Ice Cream, 1½ lbs. sliced hamsteak, 12 min.



Did you know that with a Chambers Range, food can be removed while still having your drying or cool food when you cook with the gas turned off? —Chambers

Cook with BADGER GAS

(9) Don't use a "mike." Yell if you must.

(10) Be personal with the ladies; make them think they are right up there cooking that meal.

YOU'RE INVITED TO THE **BADGER GAS COOKING SCHOOL**

WED. and THURS., NOV. 16-17, Municipal Building 2 P. M.
Each Day A Super Deluxe 1950

\$369.00 CHAMBERS Gas Range
Will Be Given Away Free
To Some Lucky Lady

\$1000 In Free Gifts For You
From Badger Gas and Platteville Business



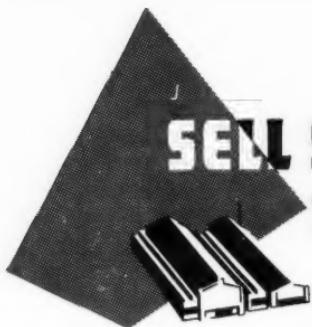
BRONSON'S FOOD MARKET
ECKER'S HARDWARE
A. & F. STORE
HARRY'S STORE
MILLER'S HARDWARE
GILL CLOTHING STORE
FIREWALL SERVICE
SPRINGFIELD HARDWARE
PLATTEVILLE HARDWARE

ROCK CLOTHING STORE
BRONSON'S CENTER STORE
D. M. DIXON'S STORE
LOG FURNITURE

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News



SELL SAFE PRACTICES TO SMALL INDUSTRY

By LESTER L. LUXON

Technical Editor, BUTANE-PROPANE News

In Two Parts Part I

LP-GAS is a highly desirable fuel for small industrial plants, but such plants seldom have employees who are experienced with the fuel.

To build and hold a profitable, small industrial business, therefore, the dealer must stand ready to offer sound advice.

The hazards to both personnel and equipment in the applications of the fuel to small industry problems can be reduced to a minimum by careful engineering of the gas distribution system, burners, and control equipment used.

The term "industrial equipment" is used here in the broad sense to include agricultural products processing equipment such as driers, dehydrators, cookers, foundry furnaces and ovens, bakery ovens, heat treating furnaces, kilns, boilers, and many others.

Numerous types of burners, safety devices and control equipment, all tested and approved by Underwriters Laboratories, the inspection department of Associated Factory Mutual Insurance Companies, American Gas Association or other accredited agencies, are available to provide safe and efficient combustion systems on any type of heating problem when properly applied.

However, the best equipment and safety devices available are wasted if sound principles of application and operation are not used. For instance, good burner and control equipment with excellent flame failure protective devices, all properly installed, will go for naught if sufficient air for proper combustion cannot reach the burners, or if no provision is made for removing the burned gases from the furnace or the building in which it is housed. In either case incomplete combustion will result.

Pure air contains 21.0% oxygen by volume. When it is diluted (with impurities such as gaseous products of combustion) until only 13% to 17% of oxygen remains, gas flames will be extinguished. However, before the oxygen deficiency reaches this point, the dangerous condition of incomplete combustion takes place and carbon monoxide may be formed.

It requires large volumes of air to burn fuel. For example, a cubic foot of natural gas requires over 10 cubic feet of air to burn it completely; a cubic foot of propane requires 24 cubic feet, or more, and a gallon of propane requires in excess of 840 cubic feet, the volume of a room 10'x12'x7'. These are minimum figures since they represent the air required for approximate theoretical complete combustion. Fuel is nearly always burned using some excess air, often 20% to 50% in excess of that actually

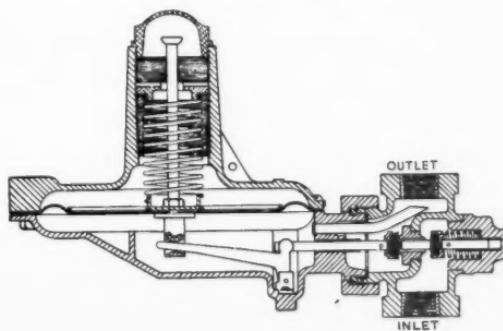
needed. (See June 1949 Safety Issue of BUTANE-PROPANE News regarding the sizing of vents.)

Many are the stories told by smoke abatement inspectors in large cities about experiences they have had when, upon unlatching the door of a boiler room, it would fly open and pull them head-long into the room. A smoking chimney was usually their reason for entering the boiler room. They got the answer to the trouble when the door opened, namely, "insufficient" space for the needed air to enter the boiler room and reach the grates and firebox of the boiler. The same is true of gas-fired equipment.

Remember too, that if the burned gases are unable to escape from an oven or building, then fresh air cannot get into the burner and as a result the flame will be smothered.

A year or two ago, the author received a long distance telephone

Fig 1. Regulator with automatic low pressure shutoff feature. Valve on inlet side closes if low pressure allows regulator spring to push diaphragm down too far. Requires manual reset.



call from a Midwestern LP-Gas dealer who was servicing a corn drier. He was having trouble with the burner on the drier going out after short periods of operation. The burner would operate in a satisfactory manner for 10 or 15 minutes and then go out. After the unburned gases were purged from the drier, he would light the burner again but in the same length of time it would again go out.

A few questions revealed that the drier was a type where the corn passed over a series of trays. The walls of the drier were tight and no space had been provided for the burned gases and the moisture driven from the corn to escape, except near the bottom of the case which enclosed the trays. In addition, the atmospheric type burner (Fig. 3) was wholly within the oven and the burner nozzle was well above the level of the outlet openings in the drier walls. After the burner operated a few minutes and started driving the moisture from the corn, it filled the oven with burned gases and water vapor. The air became diluted until the oxygen content was below 13% to 17%, and due to this the flame was extinguished.

It was recommended that both the inspirator tube and burner nozzle be placed entirely outside the drier cabinet; that the burner be fired through an opening of proper size in the bottom of the drier; and that a vent be provided nearer the top of the drier to remove the water vapor and burned gases.

LP-Gases are solvents and will

soon cause natural rubber, leather and similar materials to deteriorate and fail. Therefore, all regulators, meters, valves, etc., wherein diaphragms, packing glands, or other working parts are made of these materials, should not be used. When ordering any equipment of this nature, it is important to specify that it is to be used with LP-Gases. The manufacturers know what parts of their equipment will be affected and they will use materials which will withstand the action of these gases.

The gas distribution lines should be adequately sized and installed in accordance with local piping and plumbing codes. They should be well supported and guarded against mechanical injury where necessary. It is recommended that all piping

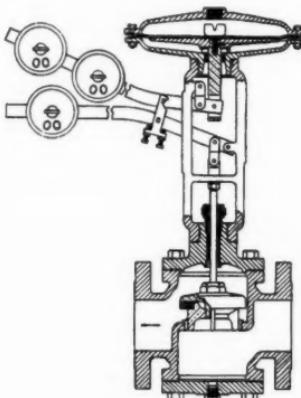


Fig. 2. A type of safety shutoff valve. Low pressure causes the interlocked arms to drop and disengage. The valve must be opened manually. (Courtesy of Immersion Heating Equipment Co.)

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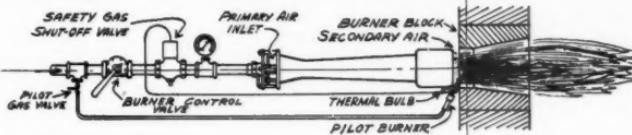


Fig. 3. Atmospheric type burner illustrating space for secondary air to enter, safety pilot and safety shutoff valve.

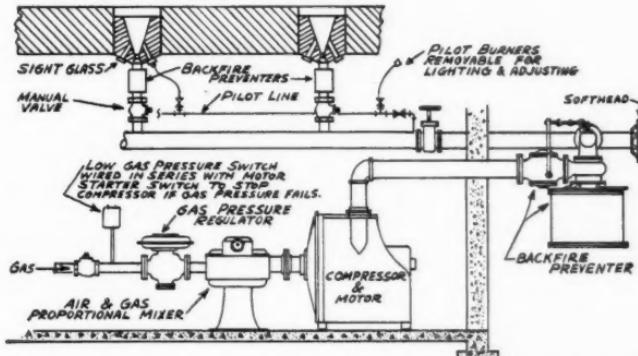


Fig. 4. Illustrating a type of pre-mix combustion system showing backfire preventers, and soft head located outside building.

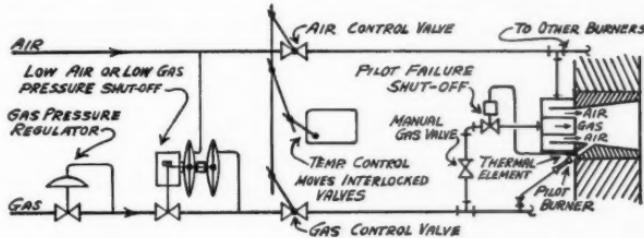


Fig. 5. Diagrammatic sketch of piping and controls to nozzle mixing burner. Piping may extend to other burners. Note interlocked air and gas control valves, individual burner flame failure safeguard and low pressure air or gas shutoff valve in gas line.

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joints be welded or brazed. If threaded joints are required, care should be used in making them tight and a special pipe lubricant should be used that will resist the solvent action of propane and butane. Unions, where required, should have metal to metal seats.

There is always the possibility that the flow of LP-Gas from the supply may be interrupted. The supply of fuel may be depleted, a regulator may freeze, vaporizing equipment fail, or a valve may be closed. The interruption may be momentary, or it may be for an extended period. Consequently, it is advisable to install either a regulator which has an overload or low pressure cut-off built into its operating mechanism (Fig. 1), or a valve with a low pressure trip (Fig. 2). It should be placed in the gas line feeding the ovens or furnaces.

These valves are constructed so that when they close they will not open again until they are opened manually. Before they are opened, the cause of the interruption must be corrected and, in the meantime, the operator should manually close the valves to all pieces of equipment using gas. After gas service is restored, the burner systems can be relit in the approved manner.

It is not within the scope of this article to describe the many types of industrial gas burners which may be used to burn LP-Gases. However, to clarify later references to classes of burners, a short description of industrial burners is included.

Industrial gas burners fall

naturally into three distinct classifications: (1) Atmospheric burners; (2) pressure burners employing pre-mixed air and gas, and (3) nozzle mixing burners employing air and gas under pressure.

Atmospheric burners entrain part of the air required for combustion by the force from the stream of gas issuing from the gas orifice or jet. The balance of the air, termed secondary air, is obtained at the burner head. When using atmospheric burners this must always be considered and provision made for the secondary air to reach the burner nozzle (Fig. 3).

Pressure burners, employing pre-mixed air and gas, utilize a mixture of gas and all required air for combustion. The mixture is forced to the burners under pressure. These combustion systems provide means for very close control of the furnace atmosphere, as the ratio of fuel to air is closely controlled at a central point and all burners receive the same mixture (Fig. 4).

Nozzle mixing burners require two systems of piping on the furnace, one to deliver the gas to the burner, and the other to deliver the air under pressure to the burner. The air and gas leave the burner nozzle through separate ports (usually adjacent) and mix during the combustion process by agitation, or by diffusion in the combustion chamber (Fig. 5).

To be continued next month.

Regulator Freeze-Up Woes Whipped By Reader's Own Alcohol Injector

A NOTHER reader, W. C. Sides, plagued by regulator freeze-up troubles* in cold weather, has done something about it. He has built an alcohol injector for his own use, but is willing that other dealers should benefit.

Mr. Sides is the service department of Semo Gas Co., Inc., Malden, Mo., and here is what he says in a recent letter:

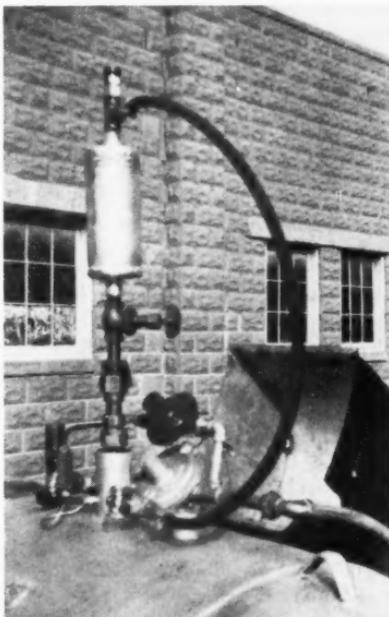
Gentlemen:

According to recent questions and articles written in the BUTANE-PROPANE News there seems to be need for an alcohol injector to add alcohol to a propane or butane tank. I recently made one, and it works 100% in that no bulk truck is required to pump the alcohol in, and also that it leaves no liquid gas in the container. Only vapor.

The injector is built around the theory of gravity flow, since alcohol is around 2 pounds per gallon heavier than gas. The picture I am sending along will help to give a better idea of the injector.

The materials required are the following:

- 1—4"x10" pipe nipple (will hold $\frac{1}{2}$ gallon).
- 2—Steel plates welded to ends of nipple. Hole in each.
- 2— $\frac{3}{4}$ " pipe couplings, welded over holes in plates.
- 2— $\frac{3}{4}$ " close pipe nipples.
- 1— $\frac{3}{4}$ " Propane gate valve.
- 1— $\frac{3}{4}$ " hose coupling (size to fit filler valve).
- 1—Rego 3118 unloading adapter.



Alcohol injector developed by W. C. Sides of Semo Gas Co., Inc., Malden, Mo.

* Regulator freeze-up trouble was discussed at length in the February issue of BUTANE-PROPANE News in a letter from a reader (Page 29) and in two articles beginning on Pages 41 and 48. An article in the March issue on selection of regulators provided additional information upon this important subject.—Editor.

- 1— $\frac{3}{4}$ " vapor return valve.
- 1— $\frac{3}{4}$ "x $\frac{3}{4}$ "x $\frac{1}{4}$ " pipe tee.
- 1—4 ft. Rego 2193-4A cylinder loading hose assembly.
- 2— $\frac{1}{4}$ " close pipe nipples.
- 1— $\frac{1}{4}$ " Rego globe valve.
- 1— $\frac{3}{8}$ "x $\frac{1}{4}$ " pipe reducer.
- 1— $\frac{3}{8}$ " hose coupling (size to fit vapor return valve).

The method of injecting alcohol is as follows:

Close $\frac{1}{4}$ " vapor valve. Open $\frac{3}{4}$ " gate valve and pour in $\frac{1}{2}$ gallon alcohol, after which again close $\frac{3}{4}$ " valve to keep from losing alcohol. Put unloading adapter on tank filler valve. Adjust the plunger with screw driver to properly open filler valve. (The injector will not work on those tanks having filler valves that the unloading adapter will not open.) Put injector on unloading adapter, and tighten nuts. Connect vapor line to vapor return valve. Slowly open $\frac{1}{4}$ " globe valve, allowing pressure to equalize in tank and in injector. Open $\frac{3}{4}$ " gate valve. By lowering the lever on the unloading adapter, the filler valve will open, allowing the alcohol to flow into the tank, which takes only a matter of seconds. To tell if the alcohol is out, the bleeder valve on the unloading adapter may be opened. When the alcohol is out of the injector, raise lever on unloading adapter, thereby closing filler valve. Close $\frac{1}{4}$ " and $\frac{3}{4}$ " valves. Open bleeder on unloading adapter, releasing pressure in adapter. Remove adapter and injector.

For those tanks that have the filler valve horizontal, I use one $\frac{3}{4}$ " hose coupling (to fit filler valve), one $\frac{3}{4}$ "x $1\frac{1}{4}$ " reducing pipe ell, and one $1\frac{1}{4}$ " single check filler valve with the valve seat removed. The three pieces I put together as an adapter so the injector will stand vertical.

Another method of keeping down freeze-ups on propane aboveground tanks can be seen on the picture. It

is using two single stage regulators instead of the usual recommended 2-stage high and low regulation system. We find using the two single stage regulators just as efficient as the 2-stage regulators. On every tank we sell, we include the cost of either above mentioned regulation system, because we do not use just the single regulator.

Gaines Butane Branches Out

Gaines Butane Co. announced October 4 the opening of a store in Henryetta, Okla., at 321 West Main St.

Lester Kuykendall is manager of the Henryetta store.



John D. Mason (left), for a number of years identified with industrial firms in Central America and British Guiana, is congratulated by F. E. Farley, president of the National L-P Gas Institute, Tulsa, Okla., on successful completion of his training course in butane-propane gas and equipment. Mr. Farley is also wishing him "happy landings" on his air trip to Managua, Nicaragua, where Mr. Mason will be associated with Gas Popular, Inc., exclusive liquefied petroleum gas service in five Central American republics.

Safe Handling of LP-Gases

Properties

Static Electricity

Transfer

By E. O. MATTOCKS

Technical Representative, Chemical Engineering Department
Phillips Petroleum Co., Bartlesville, Okla.

In Two Parts—Part 2

Transfer of LP-Gas

One of the prime advantages of LP-Gas is the practicability of storing large quantities of gas in liquid form. This permits the storage of large quantities of gas in a relatively small container. LP-Gas is likewise transported in liquid form. It is necessary, therefore, to move liquid from one container to another, especially from the transporting container to the storage container. This is accomplished generally by employing either a liquid pump or by a gas compressor. The liquid pump moves liquid from one container to another by conventional means. Considerable difficulty, however, is experienced frequently with this equipment.

The use of a gas compressor has a number of advantages such as less maintenance, less cost to move the liquid, greater capacity per horse power and generally less likelihood of leakage. With a compressor, gas is removed from the top of the storage container and transferred at a higher pressure to the top of the transportation container,

or container from which liquid is to be removed. By maintaining a small differential pressure between the two containers, it is possible to move the liquid from one container to the other.

Frequently, especially in cold weather, the temperature of the LP-Gas liquid may be such that there is very little pressure, above atmospheric, in the tank. Under this condition it may be undesirable to remove vapor from the storage container by a compressor. In such conditions other gases are used, such as natural gas or air.

The idea of pumping air into an LP-Gas container at first may appear to create a hazard. One of the purposes of this presentation is to show that this practice is not hazardous and, in fact, only under extremely unusual conditions is it possible to obtain a flammable mixture by such practice.

If an LP-Gas container holding normal butane were at a temperature of 31 F which is the highest boiling point of any hydrocarbons generally found in liquefied petroleum gas, there will exist above the liquid a volume of butane gas at atmospheric pressure equal to the

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TABLE III. THEORETICAL PERCENTAGES OF LP-GAS AND AIR FROM PRESSURING LP-GAS WITH AIR STARTING AT ATMOSPHERIC PRESSURE

Atmospheric Pressure	Container Pressure Psig	Volumes of Air	Volume of Gas	Percentage of Air	Percentage of Gas
1	0	0	1	0	100
2	14.7	1	1	50	50
3	29.4	2	1	67	33
4	34.1	3	1	75	25
5	58.8	4	1	80	20
6	73.5	5	1	83	17
7	88.2	6	1	86	14
8	102.9	7	1	87.5	12.5
9	117.6	8	1	89	11
10	132.3	9	1	90	10
11	147.0	10	1	91	9
12	161.7	11	1	92	8

vapor space in the tank. If air is applied to this vapor space the pressure in the tank will increase. The resulting theoretical percentages of LP-Gas and air in the vapor space from pressuring the container with air are given in Table III.

The last two columns indicate the percentage of air and the percentage of gas corresponding to the increased air pressure in the tank. Before a flammable mixture is obtained it is necessary to decrease the percentage of gas to the higher flammable limit which in the case of normal butane is 8.4 per cent. It is seen in Table III that to reduce the gas percentage to 8 per cent it would be necessary to have a pressure in the tank of approximately 160 pounds per square inch gauge. Obviously, if a butane tank were used the relief valve would be set for approximately 80 pounds and no such pressure could be developed.

If the temperature of the butane

given in the above illustration was reduced to some temperature below 31 degrees the pressure in the container due to the vapor would be less than atmospheric pressure. Under this condition it would not require as high an air pressure to reach the higher flammable limit. To determine the effect of such variables as temperature, deviation from ideal gas laws and the amount of air that will go into solution, the Underwriters' Laboratories (1) presented some detailed calculations which they made using the analyses of commercial grades butane and propane as given in Table IV.

Since the limits of flammability change with temperature and pressure, the upper flammable limit for the commercial product shown in Table IV was calculated assuming the relief devices would limit the maximum pressure. For butane it was assumed that the relief valve

(1) See "Bibliography" in December issue for numeral references.

would be set to operate at 80 pounds which is equivalent to 94.7 pounds per square inch absolute. Likewise, in the case of the propane it was assumed that the relief valve would operate at 225 psig or 239.7 pounds per square inch absolute. These limits are shown in Table V.

Using the pressure at which the relief valves are set the maximum temperatures at which a uniform flammable mixture could be formed were calculated and are given in Table VI. It is seen from these data that in the case of natural source commercial butane pressurized to 80 psig a flammable mixture would be formed only if the temperature was -5.4 F or lower. On the other hand if the butane were obtained from a refinery source and it represented an average product the temperature would have to be 19 degrees below zero or lower before a flammable mixture could be obtained.

In the case of commercial propane from a natural source pres-

sured with air to a pressure of 225 psig, the temperature would have to be 31 degrees below zero or lower before a flammable mixture could be secured. Likewise if the material came from a refinery source and was an average product, the temperature would have to be 38 degrees below zero or lower before a flammable mixture would be obtained.

The above data indicate that under normal operating conditions it is virtually impossible to obtain a flammable mixture of an LP-Gas container by pressuring it with air unless the temperatures are reduced to well below zero degrees F. It is recognized that these data are based on a uniform mixture of air and LP-Gas vapor in the tank. This condition will not be obtained immediately after the introduction of air into the tank. The uniform condition should be established however, after a few hours.

Before a uniform mixture is es-

TABLE IV. MOL COMPOSITION OF COMMERCIAL LIQUID PROPANES AND BUTANES

Hydrocarbon	Refinery Butane			Natural Gas Butane			Refinery Propane			Natural Gas Propane		
	Upper Limit Pct.	Average Product Pct.	Lower Limit Pct.	Lower Limit Pct.	Upper Limit Pct.	Average Product Pct.	Lower Limit Pct.	Lower Limit Pct.	Lower Limit Pct.	Upper Limit Pct.	Average Product Pct.	Lower Limit Pct.
Ethane	...	...	...	...	4.65	2.15	...	...	...	...	...	...
Propylene	2.40	...	...	...	9.78	25.71	25.32	...	...	...	...	...
Propane	12.20	5.63	...	...	85.57	71.51	70.41	95.76	...	...	...	...
Iso-Butane	21.48	15.67	...	...	...	0.43	3.12	4.24	...	...	...	...
Butylenes	44.58	29.60	30.79	...	...	0.20	1.15	...	...	...	...	...
n-Butane	19.34	48.67	67.51	98.75	...	...	...	...	...	...	...	...
Iso-Pentane	...	0.43	1.70	1.25	...	...	...	...	...	...	...	...
Vapor Pres. psig @ 100 F.	66.3	50.5	39.2	36.6	202.9	194.5	178.2	169.0	...	...	...	...

TABLE V. UPPER FLAMMABLE LIMIT OF COMMERCIAL PROPANES AND BUTANES AT PRESSURES AND TEMPERATURES STUDIED

	Pressure 239.7 Lbs. per Sq. In. Abs.					
	Temperatures—F					
	+ 10	0	-10	-20	-30	-40
Upper Limit Ref. Propane	11.76	11.74	11.72	11.71	11.70	11.69
Ave. Ref. Propane	11.62	11.60	11.58	11.57	11.56	11.55
Lower Limit Ref. Propane	11.41	11.39	11.37	11.36	11.35	11.34
Lower Limit Nat. Propane.....	11.34	11.32	11.30	11.29	11.28	11.27
	Pressure 94.7 Lbs. per Sq. In. Abs.					
Upper Limit Ref. Butane.....	9.61	9.59	9.57	9.56	9.55	
Ave. Ref. Butane	9.30	9.28	9.26	9.25	9.24	
Lower Limit Ref. Butane.....	9.06	9.04	9.02	9.01	9.00	
Lower Limit Nat. Butane.....	8.88	8.86	8.84	8.83	8.82	

tablished, it is possible that at or near the surface of the liquid in the container, a zone may be present which would be within the flammable range. This zone will not be very large and should not create a hazard since it is virtually impossible to obtain a source of ignition at this point. Furthermore, it should be remembered that these data are based on the higher flammable limit where the flame speed is relatively slow.

Under all conditions the storage and transportation containers for LP-Gas are never open to atmospheric pressure while in operation. If air or gas is introduced into the container it is held under pressure and moves through a closed system. In the case of air, adequate provision is made so that it is impossible for gas to travel back through the air line to the air compressor or other source of ignition.

Furthermore, if ignition did occur in the small zone of flammable mixture, flame would either be con-

fined to this small area or the whole mixture would burn at a relatively slow rate since the air is insufficient to provide a mixture of a high rate of burning. The temperature rise caused by this burning may or may not be sufficient to cause the relief valves to operate which would adequately relieve the excess pressure. Under no condition can it be visualized how the resultant pressure from the combustion could rupture the container.

Static Electricity

The necessity for protecting an LP-Gas container and system against static electricity is a very debatable subject. It is very common for an LP-Gas system to be required to incorporate the same static preventions as required for flammable liquids.

According to the National Fire Protection Association Standards for LP-Gas (3), all containers of 1200 gallon water capacity or over must be electrically grounded. The

purpose of this provision may be considered as possibly twofold, (1) for running off any static charge and (2) to protect the equipment against lightning.

No attempt will be made in this presentation to consider whether or not it is possible to generate static electricity by the movement of LP-Gas into or out of a container or through the accessory fittings and piping. For this discussion it can be assumed that it is possible to generate such a charge. The question is what, if any, hazards will result from such charge if during some subsequent operation a spark is produced.

It should be remembered that at all times an LP-Gas system is a completely closed system. At no time are there any open vents since the system is always under a pressure greater than atmospheric. Therefore, no air will leak into the system and even under conditions where air is forced into the system as discussed previously, there is practically no chance for a flammable mixture to be in the container or piping. If it is impossible for air to leak into the LP-Gas system or container sufficient to pro-

duce a flammable mixture then the hazard of a static spark lies in the ignition on the outside of escaping gas.

During the loading and unloading operation of a container it is always necessary to break one or more connections. While valves are used to isolate the area where the union is made, it is still necessary to permit a small amount of gas to escape when breaking this union between the permanent container and the flexible connection. If by chance a static spark was created through the breaking of such a union it might be possible to ignite the small amount of gas escaping at that time. If such a condition did exist however, little if any hazard would result because of the extremely small amount of gas present. It would be only a puff and not of any continued duration. The chances of creating a spark on connecting the flexible hose to the permanent connection appears to be greater than that of having a static spark formed during the disconnecting. No hazard appears to be present when making the connection since there would be no escaped gas coming from either the

TABLE VI. MAXIMUM TEMPERATURES AT WHICH UNIFORM FLAMMABLE MIXTURES COULD BE FORMED

Commercial Propanes at 239.7 Lbs./Sq. In. Abs.		Commercial Butanes at 94.7 Lbs./Sq. In. Abs.	
Upper Ref. Propane.....	-42.6 F	Upper Ref. Butane.....	-29.8 F
Ave. Ref. Propane.....	-38.1 F	Ave. Ref. Butane.....	-19.3 F
Lower Ref. Propane.....	-32.3 F	Lower Ref. Butane.....	-6.5 F
Lower Nat. Propane.....	-30.8 F	Lower Nat. Butane.....	-5.4 F

flexible end of the line or the permanent end of the line, since both these are closed by the valve. Therefore, any discharge of static during the connecting operation would only have a psychological effect and would not in any way create a hazard.

It would appear, therefore, that when considering the possible hazards created by a static charge, an LP-Gas system can be viewed as being virtually immune from any danger. Such a system is definitely not in anyway related to the flammable liquid tank and the attendant hazard of such type of storage.

The possibility of lightning striking an LP-Gas container, especially striking the safety relief valve risers is always present and has happened on several occasions. The presence of a ground in the system is always desirable to draw off such charges. While the ground required by the NFPA LPG Standards has proven very effective for this purpose it is doubtful if all such grounds are effective from a static standpoint.

It would appear, therefore, that the ground connection on an LP-Gas system should be considered primarily as a protection against lightning charges and not against static charges. It appears further desirable to consider that the possibility of static charges, if such do exist, on an LP-Gas system as not being hazardous.

Conclusion

An attempt has been made to show, as a result of a great deal of experience extending over a quar-

ter of a century, that the present liquefied petroleum gas installation, if it conforms with the requirements set forth by the National Fire Protection Association LP-Gas Standards (3), represents a safe installation. The use of compressed air to assist in the movement of LP-Gas has been used for over 20 years without any resulting hazards. The reason for this safety record appears to be due to the inability under practically all conditions encountered to obtain a flammable mixture within the container.

There does not appear to be any need to protect an LP-Gas system against static charge since the system is entirely closed. This is the basic difference between an LP-Gas system and one using flammable liquids. Likewise, the use of a ground connection in an LP-Gas system appears to be very effective for protection against lightning but may be of little use for protecting against static charges.

Will Use LP-Gas Tanker In Overseas Operation

In the October issue of BUTANE-PROPANE News an article appeared regarding the conversion of an oil tanker to transport liquefied petroleum gas in Great Britain. The article stated that the "Frasca" would go into commission for the bulk transportation of butane, servicing depots in various parts of the country.

A letter from the Shell Oil Co., New York, states that the tanker is being converted for the transportation of LP-Gas for operation overseas, rather than for intra-country use, as stated.

Utilities and Fringe Area Dealers Work Together Like Brothers

How'd you like to be a dealer on the fringe areas of the Southern California Gas Co.? This utility does the advertising for you, interviews your prospects, takes customer orders, and then turns over to the LP-Gas dealer the profits on all appliance sales.

An amazingly generous plan of cooperating with butane and propane dealers to "hold the load for gas" has been in force in southern California for several years. Its success suggests what can be done by utilities all over the nation to lick electric competition—and with mutual profit to utilities and dealers, alike.

Mr. O'Haver explained the plan at the Oct. 4 meeting of the South Pacific District, LPGA, and it has been digested by BUTANE-PROPANE News. For the general story of that convention, see Page 144 in the November issue.

FRINGE-AREA cooperation between LP-Gas dealers and natural gas companies (Southern California Gas Co. and Southern Counties Gas Co.) has yielded tangible benefits to all parties, and serves, we think, as an excellent example of what these "two branches" of the gas industry can do for each other.

Representing Southern California Gas Co., it has been my job to contact LP-Gas dealers in cities that were to receive natural gas, to develop a promotional



H. M. O'HAVER

By H. M. O'HAVER
General Supervisor of Dealer Programs,
Southern California Gas Co., Los Angeles

program. Because we were going in and "taking over" the territory, I approached each dealer with reluctance. The reaction was the reverse of what I expected: the dealer was actually happy that natural gas was arriving. He saw the city as a circle; when natural gas came in, the perimeter widened, and the fringe area—his profit territory—grew larger. The larger the community, the larger his market area, and the bigger his profits.

In practice, his outlook has proven correct. Because of this, SoCal and Southern Counties have extended themselves to make the fringe area a mutually profitable market. Our dealer program has taken the following pattern:

1. It is liberal—includes all gas appliance dealers (natural and LP-Gas).
2. It is aggressive—explores floor, prospect, and field sales.
3. It is complete—covers all sales ideas suggested by LP-Gasmen and is available in printed form.
4. It is profitable—all sales and all prospects are passed on to the dealer.

In brief, here's how the cooperative program works. Most important, the plan is designed to let the dealers do the large-scale, direct selling job. Secondly, the natural gas companies give

dealers all possible selling assistance: advertising, sales promotion, sales leads, and even sales made by natural gas company sales personnel. In other words, we supply the dealer's sales program.

Two types of dealerships are included in our program: cooperative and "Blue Seal." Although both receive substantial selling aid, the "Blue Seal" dealer—one who concentrates his efforts in selling gas appliances—is benefitted by the support given the cooperative dealer plus those given for his emphasis on appliance selling.

Six-Point Program Arranged

To make the program work, SoCal and Southern Counties carry out the following promotional and advertising programs:

1. National advertising—it blankets the dealer market and reaches millions of prospective gas customers.
2. Local advertising—SoCal advertising appears in 157 daily and weekly newspapers throughout its operating territory.
3. Radio advertising—SoCal has sponsored a popular Los Angeles concert program six days a week for seven years.
4. Billboard advertising—400 billboards in southern California carry a new message about gas appliances every 60 days.
5. Poster advertising—2300 streetcars, busses, and company trucks carry panel-sized posters promoting gas.
6. Direct selling—gas and gas appliances are sold through well-trained salesmen.

SoCal also publishes the "Dealer News," which carries news of the industry to all dealers—both natural and LP-Gas.

We expect to develop 75,000 pros-

pects a year through our integrated efforts. Prewar, we developed 44,000 per year and had a gratifying 30% of them turn into sales. Prospects from among our employees who are off our lines are immediately turned over to LP-Gas dealers—that's an important part of our cooperation.

In addition to the indirect and direct promotional campaigns already listed, there are several other services supported by the natural gas companies to make the dealer-utility partnership profitable. Among them are kitchen planning, home service, cooking school, dealer demonstration, market analysis, direct mail, installation training, and sales training promotions.

Home Service: Graduate home economists demonstrate appliances in the dealer's own store.

Installation Training: Dealer's employees may attend our courses in installation, adjustment, and servicing of gas appliances.

Sales Training: We will supply trained instructors, meeting place, slides, films, texts for sales meetings for dealers and their men. Text material in printed pamphlet form is now available to dealers. There are 14 pamphlets in all, covering the entire field of product selling.

Turns Over Sales to Dealers

Although we suggest to our area offices that they keep sales material designed to promote LP-Gas beyond the mains and that they imprint this material with the name of the nearest LP-Gas dealership, cases have occurred where SoCal personnel has sold LP-Gas equipment direct. In such cases the sales are turned over to the dealer as though he had made the sale himself.

Our aim is to help the dealer in any way that we can—to this end, we have developed many promotional

ideas for him. Among them the more recent features have been booklets on gas hot water heating, gas cooking, and gas space-heating, placards and streamers and recipe books and pot-holders, all carrying out the Gas-Has-Got-It theme—and even a paper mask for children carrying out the same idea!

All of these facilities fit one another to form an integrated, cohesive promotional campaign for LP-Gas dealers. We of the natural gas companies mentioned are anxious that southern California dealers take advantage of the many services we offer them. Let us join forces to sell gas to the public.

Pennsylvania Group Working For Measurement Agreement

With a view to meeting the weights and measures situation in a practical manner, the Pennsylvania Liquefied Petroleum Gas Assn. has announced that in the next several months the association and the Bureau of Standard Weights and Measures of the state of Pennsylvania will carry out a cooperative study.

Purpose of the study will be to arrive at a regulation covering the measurement and sale of LP-Gases in Pennsylvania.

Announcement of the study follows a meeting of a committee representing the association with the Bureau, in the subject of measurement and billing of LP-Gases in the state.

The association announces that in the interim, they have been requested to inform all marketers of LP-Gas in Pennsylvania that containers where gas content is sold by package weight (package weight means sale by cylinder) must have the net contents and the tare weight plainly marked on the container or on permanently attached appurtenances. (Tare weight

is weight of container, valve and other permanent attachments but does not include valve protecting cap.)

The association's announcement continues:

"This means that each cylinder should have its tare weight marked, as is now commonly done. (In addition to this, there should be permanently attached to, or either permanently marked or indelibly marked at, each filling on the cylinder, the actual net contents of the cylinder when such cylinder is sold by weight.) For example, a 100-lb. cylinder of gas should have plainly marked on it the following: 'Net contents 100 lbs.' Similarly if the cylinder were 40 lbs., or 60 lbs., or 20 lbs., the net contents should be so indicated. The cylinder should be remarked if at any time less than the full contents of the cylinder is sold.

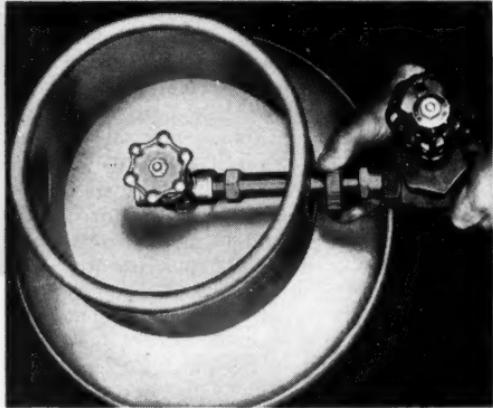
Qualify Sales Slips

"The Bureau also feels that the sales slip as made out to a customer for the sale of gas in a cylinder by weight in a package should indicate the amount of gas sold by weight. For example, 'One 100 lbs. of propane gas', not 'One cylinder of gas,' 'One tank of propane', etc.

"Methods and procedures for the sale of gas by vapor volume, liquid volume and other classifications will be studied by the Bureau and a committee representing the LP-Gas association.

"Subsequently there will be a regulation worked out covering all phases of weight and measure for LP-Gas by the Bureau of Standard Weights and Measures of Pennsylvania which will be official for Pennsylvania.

"It is requested that all who receive this information pass it on to all dealers supplied by them who sell in Pennsylvania."



SYNTHETIC RUBBER SEAL RING



POL SPEED RING ADAPTER

The POL Speed-Ring Adapter spins quickly into place and cinches up by hand for a tight leak-proof seal at the synthetic rubber ring. This ring provides a cushion gasket-like seal which makes for safer operation than ordinary metal-to-metal POL connections. Selwyn-Landers Speed Rings also available for 1 1/4" and 1 3/4" Acme Threads.

For SAFETY

SELWY QUICK FILLING H

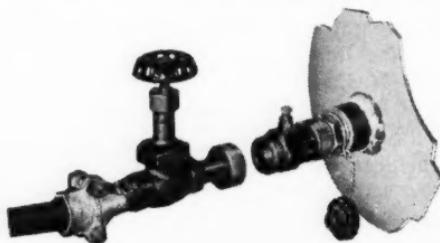


SPEED RING EXTENSIONS

The "CAUTION ZONE" extends about six inches in every direction from the fill-valve connection. This is where full safety precautions should be used. Selwyn-Landers Speed-Ring Extension Adapters keep the operator's hands in the safe zone and at the same time make the filling operation fast, easy.

SAFETY CHECK FILL COUPLING

For tanks with fill-valves of single back-pressure check construction, the S-L 901 coupling is connected prior to filling. The



filling hose is connected and tank filled. Before removing the filling hose, the bleed-off valve on the S-L 901 is opened. If continuous liquid discharge is indicated, the bleed-off valve is closed and the S-L 901 is left installed and capped, thus eliminating the hazard created by a sticking fill-valve stem. At a more convenient time the defective fill-valve can be replaced. The S-L 901 coupling costs only slightly more than a fill-valve. Every delivery truck should carry at least two S-L 901 Safety Check Fill Couplings.

SELWYN-LANDERS FITTINGS FOR SAFETY

South Carolina Firm Sells To Esso Standard Oil Co.

Mrs. M. J. Rivers, D. N. Rivers, and R. Thayer Rivers, officials of Rivers Gas and Electric Co., have announced sale of their gas equipment, installed, and their retail customers' service to the Standard Oil Co. of Columbia, S. C.

The Rivers company began operations 12 years ago, as dealers for Standard Oil.

For the past three years, they have operated from their own bulk plant, as wholesale dealers in propane gas, with service covering four counties. In addition, they have operated in

Ridgeland. They have announced the sale of these to John M. Lawson, of Summerville.

It is understood that the Standard Oil company will open local offices in each of the counties previously receiving retail service from the Rivers firm, and that Mr. Lawson will continue the appliance businesses, as before.

Mrs. Rivers, who was president of the firm, will retire from business. D. N. Rivers, who is a member of the house of representatives, will devote his entire time to his law practice, and R. Thayer Rivers will announce his plans later.



The LPGA National Committee for LP-Gas Promotion, recently appointed. Left to right (seated): Lyle Harvey, Affiliated Gas Equipment, Inc.; Ellsworth L. Mills, Bastian-Blessing Co.; M. L. Trotter, Carolina Butane Gas Co., vice-chairman of the committee; John C. Pankow, Detroit-Michigan Stove Co., chairman; Howard E. Felt, Warren Petroleum Corp.; A. B. Cameron, Ruud Manufacturing Co.; and Charles W. Johnson, Johnson Gas Appliance Co. Standing: James Robertson, The Buchen Co., Chicago agency appointed to handle advertising phase of program; William F. Lowe, Natural Gasoline Assn. of America; Gilbert Schade, Servel, Inc. (representing J. K. Knighton); Larry H. Holman, Utilities Distributors, Inc. (representing Peter A. Anderson); Allen James, Warren Petroleum Corp.; Jock McDonald, The Buchen Co.; J. Richard Varkamp, Varkamp Corp.; Ernest Fannin, Fannin's Gas & Equipment Co.; F. L. Rice, Phillips Petroleum Co. (representing George P. Bunn); and Arthur C. Kreutzer, LPGA. Members not present: Herman Merker, Pressed Steel Tank Co.; H. S. Phillips, Delta Tank Co.; Harold Dunn, Shamrock Oil & Gas Corp.; and John F. Lynch, La Gloria Corp. (Mr. Pankow has since passed away.)

Virginians Given 10 Rules to Follow

WHAT DEALERS MUST DO

1. Sales-manage your men.
2. Display, advertise, sell.
3. Improve the morale of your employees.
4. Keep the light burning on gas ranges.
5. Develop the top burner story.
6. Offer better service.
7. Formulate sales plans and technique.
8. Sell name products.
9. Don't cut prices.
10. Meet conditions head on with truth; keep the sales pot boiling with enthusiasm.

By T. D. EATON

J. Z. Watkins, merchandising manager, Rulane Gas Co., Charlotte, N. C., was scheduled to talk on the effects of natural gas coming into bottled gas territories, but a last minute illness prevented him from attending.

John B. Christiansen, Carbide and Carbon Chemicals Corp., Pyrofax division, Roanoke, was the unanimous choice of the delegates to succeed the late Joseph Lawrence, of Richmond, as vice president of the Virginia association.

E. Otto N. Williams, Bottled Gas Corp., of Virginia, Richmond, was continued in the presidency, and Thomas H. Sykes, general manager and treasurer, Suffolk Gas Co., and general manager, Nansemond Gas Corp., Suffolk, holds over as secretary and treasurer.

Mr. Toney told his listeners that "natural gas is coming; it's inevitable, and you might as well make up your mind about it."

An article in the December "Fortune" magazine, he said, was a tremendous boost for gas. The increasing price of other fuels, notably oil and coal, means that natural gas will blanket the country, he asserted. It may be two or three years, and even longer; personally, he doesn't see it in less than three years. Some parts of Virginia might get it within another year.

"What's going to happen?" he asked. "Natural gas companies are going to shoot for definite loads, in

Sixty-seven liquefied petroleum gas operators from all parts of Virginia attended the second annual meeting of the Virginia Liquefied Petroleum Gas Assn., at Richmond, Dec. 13, and heard talks on "Safety," "Financing of Appliances," "Effects of Natural Gas Coming Into Bottled Gas Territories," and an exhortation to "Stop Sparring, Start Slugging."

Speakers, and their subjects, in the above order, were: Adam Johnstone, New York City, eastern representative, the Bastian-Blessing Co.; Thomas Foley, assistant vice president, State-Planters' Bank and Trust Co., Richmond; Frank Toney, Combustion Engineering Co., Chattanooga, Tenn., and S. W. Weill, eastern sales manager, the Geo. D. Roper Corp., Rockford, Ill.

ROCKWELL-EMCO NO. 00

LP-GAS METERS

use on bottle gas sets, storage tanks, distribution systems.

SIMPLE . . .

SAFE . . .

STRONG . . .

SURE . . .



Made with lightweight, durable aluminum alloy pressure casting.



LOWEST COST MAINTENANCE

After a period of years, your Rockwell-Emco meters can be renewed by exchanging worn measuring units for new or rebuilt ones. All internal parts lift from the meter body as a unit. Only a screw driver is needed to make the switch.

THE BEST INVESTMENT YOU CAN MAKE

With Rockwell-Emco No. 00 meters you're really in the gas business. Most LP-gas customers are already conditioned and sold on meter accuracy. Metered service is also a strong selling point for new customers.

With a metered system you can make many operating economies. You can pipe several adjoining services from a single tank. You can read your meters periodically, bill monthly, fill tanks at your convenience, not the customers'.

When you buy meters get the best—get Rockwell-Emco No. 00's. They're especially designed for your LP-gas services. Made and guaranteed by a company with over 60 year experience in meter manufacture. Write for complete details and prices.

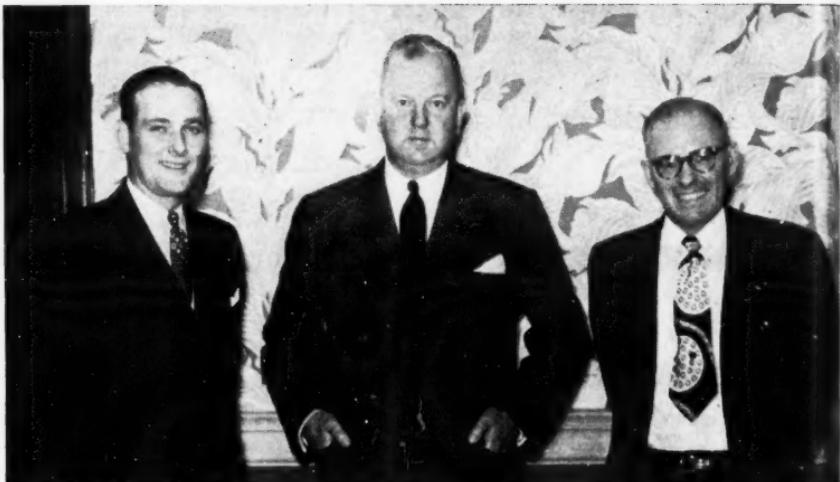
Pittsburgh Equitable Meter Division

ROCKWELL MANUFACTURING COMPANY

Pittsburgh, Pa.

Atlanta Boston Chicago Columbus Houston
Kansas City Los Angeles New York
Pittsburgh San Francisco Seattle Tulsa





Officers of the Virginia Liquefied Petroleum Gas Assn. (left to right): John B. Christiansen, vice president; E. Otto N. Williams, president; Thomas H. Sykes, secretary-treasurer.

both commercial and industrial fields. They will concentrate on major centers. They will be interested in local distribution first. You won't be affected immediately."

Mr. Toney then proceeded to give some of the adverse effects: The small operator probably will be the first to be hurt, temporarily. Natural gas companies will convert liquefied petroleum gas installations immediately.

They cannot take all the heating offered to them during the first year. They'll make more people mad than they'll make happy, at first.

He told his hearers that they stand to lose many customers quickly. "Be prepared to face it; there's not much you can do about it."

He saw some favorable aspects: "The coming of natural gas will result in a tremendous boost in the popularity of gas, all gas, including your own, especially those of you who

operate in rural areas. It will make it easier for you to sell your product in those areas."

The electric industry, he said, will immediately go on the defensive.

"Big promotion on the part of natural gas will redound to the benefit of liquefied petroleum gas. An aggressive natural gas utility will help you immeasurably by the advertising it will do. It will make people in rural areas more gas-minded. Natural gas will help you fight electric competition."

No one knows, he said, what form a natural gas project will take in Virginia. A powerful organization probably will absorb many small utilities. The principal market of liquefied petroleum gas operators will be the rural areas and the constantly expanding perimeter of the natural gas industry.

Close cooperation between the lique-

fied petroleum gas operators and the utilities should benefit the former, he reported.

"You will have a year and a half warning and 18 months in which to prepare. It won't come suddenly and unexpectedly. Cash in on your potential advantage now.

"The people will expect cheaper gas, and everyone is going to want gas for heating. Concentrate on your potential—the rural areas—now. Capitalize on the propaganda being put out by the natural gas companies. Work with the natural gas companies and you'll gain two customers for every one you'll lose. And, cooperation between yourselves is important.

"Sell the customer 'right'; furnish him with good equipment and good service—both make for good customer relations—and you'll have nothing to worry about. Conversely, furnish poor equipment and poor service—which make for poor customer relations—and you'll find you're playing right into the hands of the natural gas companies."

Now is Standard-Setting Time

Mr. Weill said that now is the time to set standards, which he enumerated as merchandising, production, and sales standards.

"Price is soon forgotten, but quality lingers on," he cautioned his listeners.

The average person purchases two ranges in a lifetime, he reminded his hearers. Why not sell them the best? he asked. The electrics do.

"The electric industry is looking ahead—it is pointing for 5,000,000 electric ranges in 1955. Let's not be complacent; we need teamwork if we are to succeed and realize our goal. We must cooperate with each other.

"Never insult the customer—sell

him the best, not good as the best.

"Success comes in cans, not can'ts.

"We have our mutual problems; we must not go back; we must look ahead.

"These are the 10 things we must do:

- (1) Sales-manage our men;
- (2) Display, advertise, sell;
- (3) Improve the morale of our employes;
- (4) Keep the light burning on gas ranges;
- (5) Develop the top burner story;
- (6) Offer better service;
- (7) Formulate sales plans and techniques;
- (8) Sell name products;
- (9) Don't cut prices;
- (10) Meet conditions head on with truth; keep the sales pot boiling with enthusiasm."

Court of Flame Campaign To Continue in 1950

The gas water heater industry in cooperation with the Gas Appliance Manufacturers Assn. has drawn up basic plans for a new and larger scale automatic gas water heater sales campaign for 1950, according to Ralph R. Towne, chairman of the sales promotion committee of GAMA's gas water heater division. The campaign will be of seven months duration—Mar. 1 until Sept. 30, 1950.

Due to the success of the current program in establishing the "Court of Flame" name and seal as a buyers' guide, the 1950 campaign will continue with the same theme and seal. Among other objectives of the new program will be competition for the selling time of all LP-Gas dealers as against selling other appliances.

According to Stanley C. Gorman, director of the 1949 and 1950 campaign, the sales contest will be similar to the original one with the added advantage of making it possible for all salesmen to be awarded prizes, thereby guaranteeing maximum interest and support.



REGO CYLINDER VALVES FIT YOUR REQUIREMENTS TO A -

REGO'S No. 3100 Series Cylinder Valves are designed specifically to meet the many and varied requirements of the LP-Gas industry. Typical valves and applications are illustrated on the opposite page.

All in all, there are nearly fifty cylinder valves in the RegO line. These are modifications of RegO's basic design, and cover such added features as:

- Spring-loaded safety relief devices
- Auxiliary fuse plugs
- Excess flow check valves
- Fixed tube liquid level gauges
- Tapped openings for withdrawal tubes
- Handwheel or wrench operation
- Outlet connection variations

You get these five important design and construction features every time you specify RegO No. 3100 Series Cylinder Valves

1. Leakproof diaphragm construction withstands more than 250,000 opening and closing cycles without failure.
2. Increased relief valve area—can be used on ICC cylinders up to 200 pounds LP-Gas capacity.
3. Integral "pop-action" type safety relief valve.
4. Enlarged seat and port—faster charging and discharging.
5. Seat lifted mechanically as handwheel is turned—no dependence on springs or gas pressure to open valve.

RegO's wide range of standard cylinder valves enables you to select the type which will meet your requirements to a "T"! Write today for complete specifications.

REGO
LP GAS EQUIPMENT

Headed by
REGO EQUIPMENT CO.
Dallas, Texas
REGO EQUIPMENT CO.
Montgomery, Ga.
WESTERN GAS EQUIPMENT CO.
Montgomery Park, Calif.
A. C. G. & A. S. Industries, B. P.
IMPULSE FRAMES MPG. CO., LTD.
London, Canada

The **BASTIAN-BLESSING**[®]

4201 W. Peterson Ave., Chicago 30, Illinois



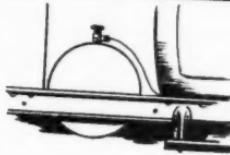
RegO cylinder valve with integral "pop-action" safety relief valve... auxiliary fuse plug optional.



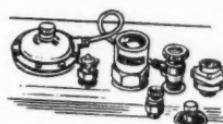
RegO cylinder valve with integral safety relief valve and fixed liquid level gauge to determine contents when filling.



RegO cylinder valve incorporating integral safety relief valve, fixed liquid level gauge and, in addition, an excess flow check valve to safeguard against accidents.



RegO cylinder valve with integral excess flow check valve and $\frac{3}{8}$ " SAE flare outlet connection.



RegO cylinder valve providing shut-off only. For installations where separate relief devices are provided.



RegO No. 2789 Cash and Carry cylinder valve includes an automatic shut-off mechanism, safety relief valve, fuse plug and outlet connection in a single unit.

RegO is the registered trade mark of the Bastian-Blessing Co.

PIONEER AND LEADER IN THE DESIGN AND
MANUFACTURE OF PRECISION EQUIPMENT
FOR USING AND CONTROLLING LP GASES

ASSOCIATIONS

LPGA's 4-Day Convention Will Stress Sales, Service

Plans for a greatly expanded four-day convention and trade show to be staged in 1950 by the Liquefied Petroleum Gas Association have been announced by W. A. Schuette, of

H a u s g a s , Inc., Washington, Mo., who is chairman of arrangements for the annual event. Sessions are scheduled for May 8-11 at the Palmer House, Chicago.

The convention committee has de-

cided to place program emphasis in 1950 on sales and service. In addition to talks on these subjects by industry leaders, there will be a progress report on the recently launched national LP-Gas promotion. An address by a celebrated political figure is also contemplated.

Contract application blanks for booths at the trade show have been mailed to manufacturers.

NBPA Directors

Jan. 27-28 is the date for the next meeting of the board of directors of the National Butane-Propane Assn. The place is the Baker hotel in Dallas, Texas, according to E. E. Hadlick, executive vice president.

Presiding at the two-day meeting



W. A. SCHUETTE



FORREST FRAM



E. E. HADLICK

will be Forrest Fram, president of the association. Hosts to members of the national group at a social affair will be directors of the Texas Butane Dealers Assn., who will be meeting in Dallas at the same hotel on Jan. 26.

Earle A. Clifford, of the National L-P Gas Institute, Tulsa, will be a speaker at the session, discussing a standard for pipe sizing and a standard specification for underground and aboveground piping.

The following topics will also be discussed: 1950 convention; enlarged housing and storage tanks; safety recommendations for consumers; safe practices code; insurance; safety schools and safety training—consumer contacts through exhibits, fairs, etc.; and a valve testing proposal.

The meeting will be open to any industry members who are interested in attending.

Alabama

The Alabama LP-Gas Dealers Assn. met Dec. 7 in Birmingham to discuss

many problems of interest to the industry members. The meeting was held at Tutwiler hotel with 18 dealers in attendance. Selwyn Turner, president of the association, presided.

Of prime interest to dealers was the decision to hold the annual state meeting in Birmingham on Mar. 24-25.

Hereafter quarterly meetings will be held, starting in 1950. This move was suggested by Roy Schultz of Andalusia, Ala. W. R. Ruffles, Fairhope, moved that a membership committee be appointed consisting of members from eight sections of the state. Mr. Turner will announce committee members shortly.

According to George A. Smith, secretary-treasurer of the group, the association has decided to have an accountant get information from dealers all over the state to determine costs of handling LP-Gas.

Alabama LP-Gas Dealers Assn. at present has 41 paid members out of 68 dealers in the state.

Colorado Changes Annual Meeting to Spring of 1950

At the first meeting of the 1950 board of directors of the Colorado LP-Gas Assn., held in Denver Oct. 24, it was decided to hold the 1950 annual convention and trade show next spring. The 1949 convention was held in the fall and, as a result of the press of business during that time of the year, many dealers were unable to attend.

The exact dates have not been de-



SELWYN TURNER

termined but they will be arranged so as not to conflict with other industry meetings.

F. N. Mabee, chairman of the advisory board and a member of the service school committee, reported upon the tentative plans for the forthcoming service school (reported elsewhere in this issue). The advisory board also suggested that further study be given to the promotion of laws for the licensing of all LP-Gas dealers in the state.

Marion Chelf, president of the association, appointed Elmo Hall chairman of the newly formed safe practices and code committee.

The insurance committee, headed by Bob Baum, has been endeavoring to develop a program which would offer full coverage coupled with reasonable premiums, and reports that realization of the requirements of the industry seems near.

Colorado Service School Scheduled for Feb. 6-8

Tentative plans for the Colorado LP-Gas Assn. service school have been made by a special committee composed of F. N. Mabee, W. M. Baum, J. L. Thompson, and C. G. Weakland. The school will be held in Denver, Feb. 6-8, using the auditorium of the Central Christian church.

The program, subject to revision, follows:

Feb. 6, Monday — "Properties and Characteristics of LP-Gas," by L. L. Black, Skelly Oil Co.; "Coordination of Regulation and Piping," by Ralph Engstrom, The Bastian-Blessing Co.; "Operating Problems," open forum led by Bob Baum.

Feb. 7, Tuesday — "Fundamentals of Combustion," by E. H. Kahler, American Stove Co.; "Fundamentals of Venting," by C. E. Blome, Metalbestos Co.; "Installation and Servicing

of Ranges," by Mr. Black; "Installation and Servicing of Water Heaters," by T. H. Jones, Bryant Heater Div.; and "Servicing of Regulators," by Mr. Engstrom.

Feb. 8, Wednesday — "Principles of Space Heating," by Ed McCarren, Bryant Colorado Co.; "Electric Thermostatic Controls"; "Customer Relations," by Harold E. Jalass, Cribben & Sexton Co.; "Operating Emergencies," by John Knox Smith, LPGA; "Pilot Generated Thermostatic Controls," by M. B. Gault, Robertshaw Thermostat Div.

Registration fee will again be \$10 and the manual will be included in the fee.

Indiana

Out of an organizational meeting held Nov. 17, has emerged the Indiana LP-Gas Assn., headed by T. M.

Feely, Indianapolis Bottled Gas Co., as president.

The meeting, held at Hotel Antlers in Indianapolis, had a turnout of 100, representing all branches of the liquefied petroleum gas industry. Officers and former officers of the state associations of Kentucky, Missouri and Kansas all spoke on the advantages of a state organization.

Miss Frances Holliday, Kentucky LPGA president, discussed the advantages of dealers cooperating in a state association; W. A. Schuette, past president of the Missouri LPGA, pointed out the necessity for small dealer participation in state association activity; R. H. Mahnke, assistant managing director of the National LPGA, lauded the accomplishments traceable to state and national association cooperations; and R. W. Hadlick, executive secretary of the Mis-



Officers and directors of the newly organized Indiana Liquefied Petroleum Gas Assn. were selected from this group at a Nov. 17 meeting.

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More satisfied customers!
More profits to you!

It's a good deal...
both ways

When you Sell O'KEEFE & MERRITT Gas Ranges

Anyway you look at it...design, eye-appeal, buy-appeal...the O'Keefe & Merritt LP-Gas Range means more satisfied customers...more profits to you! Today, more than ever, this fine line of gas ranges is so easy to sell. More than sixteen models from which to choose to give your customers the O'Keefe & Merritt model they want at the price they want to pay.



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Speakers at Indiana LP-Gas Assn. meeting (seated, left to right): Miss Frances Holliday, president, Kentucky LPGA, and R. H. Mahnke, assistant managing director, national LPGA. Standing: R. W. Hadlick, executive secretary, Missouri LPGA; and W. A. Schuette, past president, Missouri LPGA.

souri LPGA, analyzed the accomplishments of his group in legislative matters.

A constitution and by-laws were adopted unanimously and 45 applications for active and associate memberships were received. From this group, a 9-member board of directors was elected, which in turn elected the state officers.

In addition to Mr. Feely, J. Crowden, Indiana Bottled Gas Co., Peru, was elected vice president, and C. P. Keeley, Carbide & Carbon Chemicals Corp., Indianapolis, secretary-treasurer.

The board of directors—each member representing a geographical division—is composed of the following: C. J. Bucko, Gary; R. G. Grenda, LaPorte; E. Seagly, Kendallville; C. Raub, Huntington; Mr. Feely, Indianapolis; T. Holden, Linton; P. Ogle, Jeffersonville; A. H. Moon, Lawrenceburg; and T. Unger, New Castle.

Propane Must Supply Domestic Need as Butane Use Broadens

At the fall meeting of the Butane-Propane Institute of Louisiana held at Alexandria, Dr. R. T. Goodwin, manager of Shell Oil Co.'s special products department, New York City, told LP-Gas dealers that butane may be priced out of the LP-Gas market.

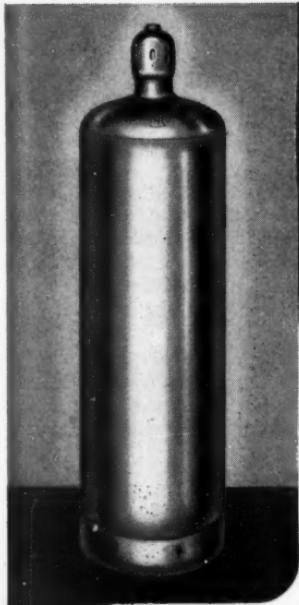
Due to increased uses in other fields, butane is becoming increasingly scarce. Petroleum and chemical industries have developed products which demand larger and larger quantities of butane. Its economic value to aviation-gasoline manufacturers already is considerably higher than it is to fuel distributors, he said.

However, the propane supply situation is so favorable, according to Dr. Goodwin, that dealers should devote some time to "creative selling" of the fuel in such markets as tractors and agricultural installations.

Louisiana

The Butane-Propane Institute of Louisiana headed by Louis Abramson, Petrolane Gas Corp., New Orleans, as president, met in Alexandria on Nov. 10 to hear many prominent industry speakers.

Dr. R. T. Goodwin, manager of special products division of Shell Oil Co., New York, told dealers in attendance that industrial demands for butane



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7

YEARS IN
PENNSYLVANIA'S
CAPITAL



LOUIS ABRAMSON



G. L. BRENNAN

were increasing and that the sale of propane should be stressed.

G. L. Brennan, manager of the LP-Gas division of Warren Petroleum Corp., Tulsa, spoke on the supply situation.

Harry Polk, New Orleans counsel for the California Co., suggested that Louisiana dealers emphasize a "grass roots" program of public relations by explaining their program to the public and legislators, alike. He joined the dealers in protesting against placing the LP-Gas industry under the public service commission, stating that "it no more belongs under that than coal or fire wood."

Other officers of the group include John M. Robinson, Butane Gas, Inc., Woodworth, vice president; F. J. Roberson, Butane Gas & Equipment Co., Coushatta, secretary; and Howard J. Carney, Home Gas & Fuel Co., Lafayette, treasurer.

Long Island

Plans have been made by the Long Island Liquefied Petroleum Gas Assn. to hold a dinner-dance in mid-January. The affair, for members, their wives and guests, will present an opportunity for members and wives to meet socially.

Committee for arrangements in-

cludes Harry Newman, Pyrofax Gas, chairman, Lou Seeley, Consolidated Gas Co., and A. E. Wastie, U. S. Natural Gas Co.

Maine

New England's first local LP-Gas association was formed at Augusta, Maine, Dec. 12, when some 25 bottled gas dealers from central Maine formed the Central Maine LPGA.

First president of the group is Leon Roberts, of Roberts & Young, Winthrop. Other officers are Fred Boston, Happy Cooking Gas, Gardiner, vice president, and Orman F. Cummings, Maine Gas, Waterville, secretary-treasurer.

Montana

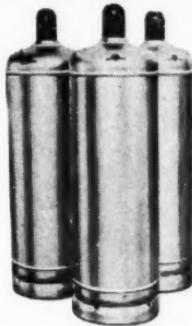
One hundred per cent of the members—and a sizable number of guests from other states and from Canada, were on hand for the 1949 convention of the Montana Liquefied Petroleum Gas Assn., held in Great Falls, Nov. 18-19.

What's more, 100% of the members means 100% of the LP-Gas dealers in the state; the association has the enviable record of having every distributor in Montana included on its membership lists. There were 60 persons, dealers and their guests, in attendance at the two-day convention in Great Falls' Hotel Rainbow. In addition to the Montana delegates, dealers from several Alberta (Canada) firms, and from North and South Dakota, took part in the convention's sessions.

Also present were representatives of many LP-Gas equipment firms, and officials of the national associations. Among the latter were Si Darling, national LPGA president, who was featured speaker of the

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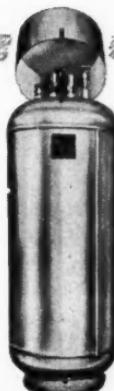
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Tare Wt. 132 lbs.
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Height — 45 $\frac{1}{2}$ "



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Tare Wt. 39 lbs.
Diameter — 14 $\frac{1}{2}$ "
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200# CAPACITY
PROPANE CYLINDERS

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U-69 A.S.M.E.
57 Water Gallon
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Butane Systems — U-69 construction — 101 lbs. working pressure — above or underground.

Propane Systems — U-69 construction — 200 lbs. working pressure — above or underground.

Capacity	Bodies	Propane
150 gal.	24" x 6'11"	24" x 6'11"
250 gal.	30" x 7' 7"	30" x 7' 7"
288 gal.	None	24" x 13' 1"
363 gal.	36" x 7' 3"	36" x 7' 3"
500 gal.	36" x 10' 2"	41" x 8' 8"
1000 gal.	42" x 14'10"	46" x 12' 6"





Newly elected officers and directors of the Montana LP-Gas Assn.: Front row—George Steele, Butte, president; D. O. Mecklenburg, Billings, vice president; S. E. Pulliam, Cut Bank, secretary-treasurer. Back row: F. C. Jones, Great Falls, and Phil Bird, Kalispell, directors.

convention, and John Knox Smith, LPGA field engineer, who brought the members up to date on latest safety developments.

Also on the program were two representatives of the Bastian-Blessing Co. (Chicago): J. W. Mahany, sales engineer, who spoke on the use of LP-Gas controls with installation and Harris A. Goodwin, general sales manager, who showed motion pictures of the do's and don't of LP-Gas installation. Development of the industry in Canada was the subject of a general discussion by delegates following the addresses.

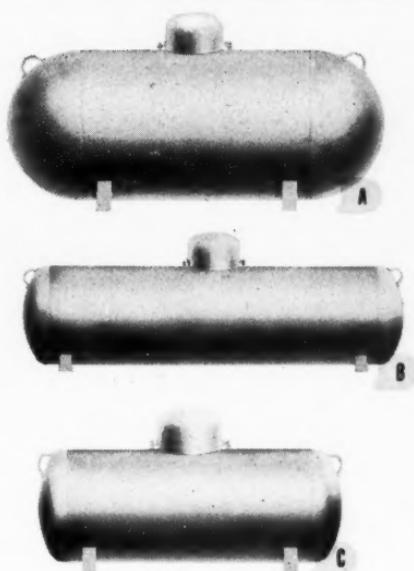
Last feature on the program was election of officers for the current year. Heading the Montana LPGA

as a result of the voting will be George Steele, Butte, president; D. O. Mecklenburg, Billings, vice president; S. E. Pulliam, Cut Bank, secretary-treasurer; and F. C. Jones, Great Falls, and Phil Bird, Kalispell, directors.

Nebraska

Elected to the presidency of the Assn. of Nebraska LP-Gas Dealers at the annual convention and trade show Nov. 21-22, was Roy W. Pearson, Holdrege, succeeding G. E. Switzer, of Beatrice.

The convention, held at the Paxton hotel in Omaha, was attended by approximately 125 members, according



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- C - 250-Gallon Water Capacity
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Banquet scene at the fall meeting of the Association of Nebraska LP-Gas Dealers.

to Fremont Meyers, executive secretary. Program speakers included:

E. Carl Sorby, Geo. D. Roper Corp.; Danna F. Cole, college of business administration, University of Nebraska, speaking on bookkeeping and its place in the LP-Gas industry; and a representative of Ensign Carburetor Co., Huntington Park, Calif., spoke on the importance of carburetion to the LP-Gas industry.

Other officers elected are Carl A. Nelson, Omaha, 1st vice president; Veryl Storer, Ogallala, 2nd vice president; Ralph Hawkins, Hebron, secretary; and Victor A. Anderson, Lincoln, treasurer.

Directors (in addition to the officers): G. E. Switzer, Don C. Everett, Perry Jarvis, and George C. Sheldon.

All organizations serving the liquefied petroleum gas industry are invited to send to this department notices of forthcoming meetings and reports upon such meetings after they have occurred.—Editor.

Ohio

The fall meeting of the Ohio Liquefied Petroleum Gas Assn. was held Nov. 16 at the Fort Hayes Hotel, Columbus, with 97 guests and members in attendance.



BOB BRUMBY

Presiding at the meeting was President Bob Brumby. Lee Higdon of the Shell Oil Co. acted as master of ceremonies. Among the morning speakers were E. E. Hadlick, executive vice president of the National Butane-Propane Assn., R. H. Mahnke, Liquefied Petroleum Gas Assn., and John Guardiola, Weatherhead Co. Mr. Guardiola spoke on the subject of advertising.

The afternoon session included a

talk on salesmanship by Pierre Vinet, of the Geo. D. Roper Corp., and a cooking demonstration and discussion on gas vs. electricity by Lee Brand, Empire Stove Co.

According to Lyman Adams, secretary-treasurer, of the association, a directors meeting was called by President Brumby following the general meeting. As a result of this meeting the officers of the Kentucky, Indiana, Michigan and Pennsylvania associations will be invited to attend the Ohio spring meeting.

Discussion was held on district meetings to attract new members from each district. The first of these meetings, to be headed by the district trustee, will be held in the northeastern territory. It will be under the direction of Forrest Fram, Chagrin Falls, who is president of the National Butane-Propane Assn.

Pennsylvania

Roy R. Johnson, Fuelane Corp., Liberty, N. Y., was reelected president of the Pennsylvania LP-Gas

Assn. at a meeting held Oct. 31 which was attended by nearly 60 LP-Gas men.

Those present at the Hershey, Pa., meeting heard many suggestions in regard to the advancement of the industry through the activities of the association. It was suggested

that cooking demonstrations, conducted by the association, be given at the various state fairs in 1950.

L. B. Richards, a member of the



ROY R. JOHNSON

Pennsylvania Gas Assn., was a luncheon speaker. He stressed the thought that much good would come from the cooperation of the two state associations.

Other discussions included H. Emerson Thomas speaking on LPGA activities; Julius Klein, Caloric Stove Corp., "What GAMA Is Doing for Us"; F. E. Allamby, advertising; Walter Hoagland, Fisher Governor Co. and chairman of the safety committee, safety; and Clarence Staats, "Constructive Selling."

In addition to Mr. Johnson, the following officers were reelected: J. C. Fletcher, vice president, and L. F. Finkler, secretary-treasurer.

Directors: Clarence Staats, H. Emerson Thomas, Alton Lutz, W. I. Ronald, and Theodore Kapnek.

Utah

Although in existence for more than a year, the Utah Liquefied Petroleum Gas Assn. has just recently become active. At the recent annual meeting, the following officers were elected:

L. Marshall Haines, Inland Gas Co., Salt Lake City, president; Fred H. La Frentz, LaFrentz Liquid Gas Co., Cedar City, vice president; and John W. Haines, Inland Gas Co., Salt Lake City, secretary-treasurer.

According to John Haines, Utah dealers were reluctant to travel the great distances necessary for an active organization. However, as the industry grew, industry members became more and more aware that they needed regulations of their own making before the state and cities imposed too severe legislation. They also felt that taxes were too high, inasmuch as present enactments consider LP-Gas simply as a motor fuel—not

as a fuel for stationary engines and as a domestic fuel.

At the present time, the association has better than two-thirds of Utah distributors as active members and a number of individual members, an appreciable growth through the past two years. A strenuous effort will be put forth to increase membership through a committee headed by Charles Rodman, Lang Co., Salt Lake City. At the present time, this is felt to be the most urgent need of the association.

The second objective is the safety and regulation of LP-Gas operators in the state. State legislation is preferred with the active cooperation of the association. Heading the legislation committee is J. H. Reese.

The third objective is revised taxation. Dealers feel that the tax law is out of date and a definite handicap



Miss Charlotte Thorp, Ohio Valley Gas Co., Mayfield, Ky., showing President Frances Holliday the Kentucky association emblem for which she was awarded \$50 in prize contest.

to the industry and should be revised.

Other committee chairmen include: safety and insurance—Don R. Bolton, Mountain States Gas Co., and, resolutions—J. W. Haines.

Directors elected for 1950:

J. H. Reese, Bear River Liquid Gas & Appliance, Tremonton; L. Marshall Haines; R. D. Kier, Utah-Colorado Gas Co., Vernal; Ed E. Provonta, Eastern Utah Gas Co., Price; and Kent F. Farnsworth, St. George Gas Co., St. George.

CALENDAR

1950

Mid-Jan.—Long Island LP-Gas Assn. Social Event.

Jan. 17—New England LP-Gas Dealers Assn. University Club, Boston, Mass.

Jan. 26—Texas Butane Dealers Assn. Board of Directors. Dallas.

Jan. 27-28—National Butane-Propane Assn. Board of Directors Meeting. Baker Hotel, Dallas, Texas.

Feb. 20—New Jersey LP-Gas Assn. Hotel Berkley-Cartaret, Asbury Park.

Mar. 24-25 — Alabama LP-Gas Dealers Assn. Birmingham.

April 12-14—National Petroleum Assn. Hotel Cleveland, Cleveland, Ohio.

April 24-26 — Natural Gasoline Assn. of America Annual Convention. Texas Hotel, Ft. Worth, Texas.

May 8-11 — Liquefied Petroleum Gas Assn. Annual Convention & Trade Show. Palmer House, Chicago.

May 11-12—Missouri LP-Gas Assn. Hotel President, Kansas City.

May 28-30—Gas Appliance Manufacturers Assn. Annual Meeting. The Greenbrier, White Sulphur Springs, W. Va.

June 22-24—Texas Butane Dealers Assn. Blackstone and Texas Hotels, Fort Worth.

Sept. 13-15—National Petroleum Assn. Hotel Traymore, Atlantic City, N. J.

Sept. 18-20 — National Butane-Propane Assn. Congress Hotel, Chicago.

Oct. 2-6 — American Gas Assn. Annual Convention. Atlantic City, N. J.

been on the late side—the fuel tells you about it in no uncertain terms if the spark fires too early. With LP-Gas engines the timing can be quite a bit too early before the fuel or the engine gives any indication that anything is wrong. In adjusting the ignition timing of butane engines there is considerably more reason for doing it with the utmost accuracy in relation to the needs of that particular engine. You have two directions in which you can go wrong.

Please note the emphasis on "that particular engine." Engines of the same make and model are not iden-

tical in their characteristics, performance, or requirements, any more than all the babies born of white parents in Detroit in 1949 were identical. There are many small variations which combine in different ways to make very considerable differences in the final result. In nothing is this more clearly shown than in their variation of response to ignition timing set according to predetermined markings.

In order to understand ignition timing, one needs first to understand two of the fundamental principles of the internal combustion engine. The first is that all of these engines develop their power by harnessing the expansive force of heated vapors. Just forget the time-honored myth that an engine runs by harnessing the result of a series of explosions.

Whether we are considering engines run by gasoline, butane, diesel, or the jet turbine principle, they are all pressure engines. In all cases the pressure is produced by burning a mixture of fuel and air in the combustion chamber. This process is neither instantaneous, as in an explosion, nor is it long drawn out. It takes about 1/100th of a second, if your throttle is wide open, for the normal flame in your engine to pass through 5 inches of combustion chamber. This varies slightly with certain conditions, such as compression and turbulence, but it is a good approximation of the speed of the flame. Combustion is complete as the flame passes through the mixture. After that, the pressure produced by the heat of combustion pushes the piston down, and produces power.

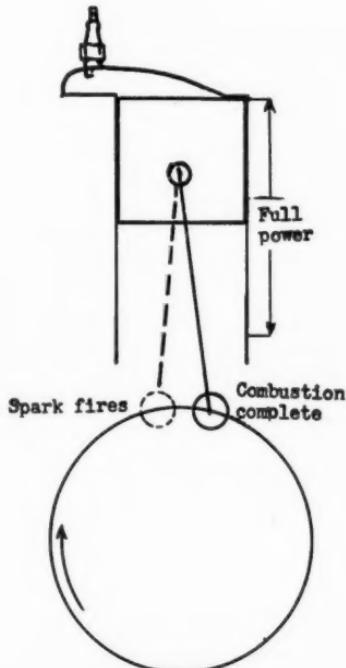


Fig. 1,
CORRECT TIMING

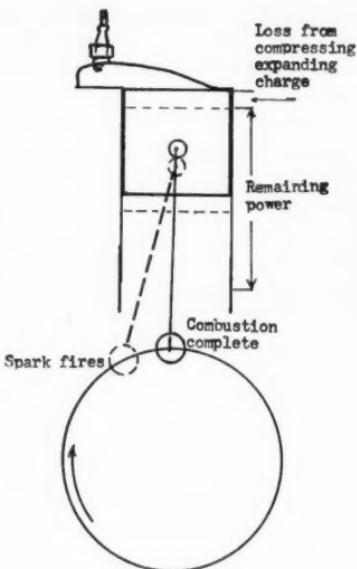


Fig. 2,
EARLY TIMING

The second fundamental is that we get greatest power, and maximum economy insofar as it is controlled by ignition timing, when we produce the highest possible pressure through the longest possible distance of piston travel. This means that combustion must be complete, and pressure at its highest, just as the effective downward movement of the piston begins. This is within a few degrees after the crankshaft passes top dead center.

The position of the piston and the crankshaft when combustion is complete is the all-important thing in determining the correct ignition timing. The flame in a correctly timed engine does not follow the piston down the cylinder—the pres-

sure of the heated gas pushes it down.

The spark which starts the fire must occur far enough ahead of top dead center to enable the flame to travel across the entire combustion chamber, burn all the fuel, and develop the highest possible pressure just as the piston starts to move downward—no later, and no earlier, if full power and economy are to be obtained. (See Fig. 1.)

Since the time required to burn the fuel is nearly constant at a given throttle opening regardless of engine speed, it is necessary to fire the spark earlier at higher engine

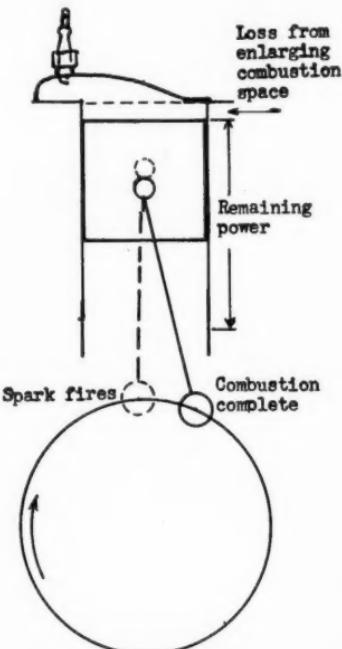


Fig. 3,
LATE TIMING

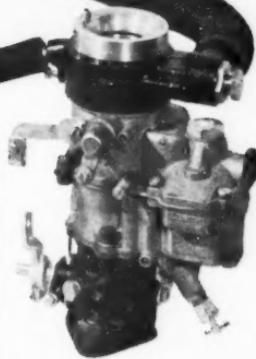
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Electric Fuel Valve
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Try the Improved
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The Roadmaster line offers improvements in LP-Gas carburetion that give faster starting—smoother operation—greater power—increased mileage. The line includes vaporizer-regulators for engines up to 500 h.p.—a complete line of adapter and straight carburetors that will convert any truck, tractor or stationary engine to LP-Gas.

Roadmaster Vaporizer-Regulators are different from other makes because they discharge at controlled pressure instead of sub-atmospheric. This feature makes it possible to use a simple type carburetor adapter in which a single fuel adjustment automatically provides correct starting, idle and mixture ratios for maximum performance and economy.

Carburetor Adapter is the simple venturi type of mixture control which employs one fuel load adjustment. It operates in any position; fits standard carburetor air horn connections and provides a combination unit.

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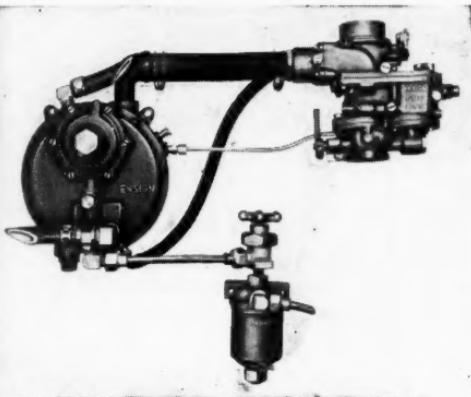
The chassis dynamometer enables the tune-up man to set ignition timing accurately without taking the vehicle on the road.

speeds, in order that combustion may be complete at the right time. This is the reason for the automatic advance governor which is built into the distributor. With different throttle openings we have more, or less, fuel in the compressed charge. The flame travels faster through a very densely packed charge (wide open throttle condition), and slower through a less dense charge. To compensate for this, and complete the combustion at the right time, we have the vacuum spark control on the distributor. Except to see that these two controls are working according to specifications, the tune-up man may ignore them in setting the timing. If they are right at one setting, they should be right throughout the entire working range.

Now suppose the spark is set so

combustion is complete too early in the cycle. (See Fig. 2.) Then a large share of power is wasted in pushing the piston up against the pressure which is developing in the too-early-ignited charge. The heated gases are also held in the combustion chamber for a longer period at maximum temperature, which allows more of the heat to escape into the cooling water. The engine therefore runs hotter, and additional power is lost through the cooling of the burned charge (which lowers its pressure).

Suppose the spark occurs late. (See Fig. 3.) Then the piston starts to move downward before combustion is complete. That enlarges the space in which combustion takes place, and the potential maximum is never reached. The highest pressure obtained occurs after the pis-



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SERVICE is a big word with Ensign. Part of our responsibility, we feel, is keeping the ever-growing parade of Butane-Propane dealers and service-men well supplied with engine and carburetor information.

To do this we have produced a series of serviceman "helps" to better acquaint him with carburetion and engine problems. In separate bulletins combined into one Service Manual, each Ensign product is dealt with completely and simply from its principle of operation to servicing instructions including parts price list. All bulletins follow a standard format for easy reference.

To the LP-Gas dealer and engine operator alike, Ensign service, slanted to the man in the field, means greater satisfaction with the fuel and lower operating costs.



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ton is part way down the cylinder; hence, the effect is to give less pressure through a shorter distance. Of course this causes a loss of power.

Let's see what else happens. The piston moves downward, uncovering the upper part of the cylinder wall, while combustion is still taking place. The exposed cylinder walls offer more surface to absorb heat radiated from the flame. These walls are clean, and do not have any insulating layer of carbon as the combustion chamber walls do, so the heat loss becomes disproportionately high. This adds still more to the power loss, and the water temperature indicator goes up. Since late timing makes the upper cylinder walls hotter, more of the lubricating oil film distills off, and burns right along with the fuel. With less protection, wear increases at the top of the cylinders.

Good Care, Little Wear

It has been frequently observed that engines which have been kept timed correctly, and in which proper lubricating practices have been followed, show little cylinder wear over very long periods. This writer has seen many in which the wear measured less than .005" in 100,000 miles of operation. The same model engines operated with the timing late, to get along without knocking on a low octane fuel, will frequently show more than .020" of wear in a short funnel at the top of the piston stroke, in 40,000 miles. Then it is time for a rebore. That makes a big difference in operating costs.

Except for this increased upper cylinder wear, late timing is just

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L-P Gas Dealers everywhere are finding new and profitable markets right in their own territory with new, easy-to-install ALGAS Conversion Units. ALGAS L-P Gas Carburetion helps you add:

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about equivalent to reducing the compression ratio of the engine. That is why it permits a supposedly high compression engine to operate without knocking on a low compression fuel. While late timing is not good for the engine, most mechanics have learned that in the case of an owner who will not use the grade of gasoline that permits the engine to develop full power, late timing is the only thing to do. The results of prolonged knocking are even worse.

With these facts in mind, it becomes apparent that the correct timing for the engine, and the best permissible timing for a given grade of gasoline, may be and often are two very different things. With LP-Gas fuel you need only to be

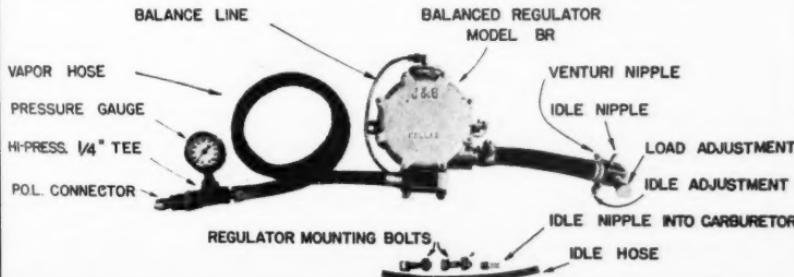
concerned with one point of ignition timing—the correct timing for that particular engine. How do you find out what it is?

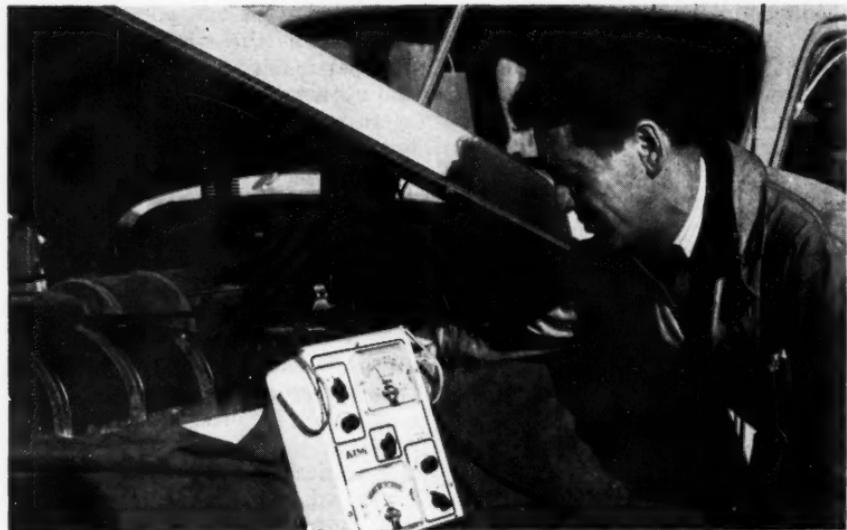
Most engines have some kind of ignition timing marker, either on the flywheel or on the vibration dampener. These provide the "quick and nearly" method of timing which most mechanics use. But think nothing of it. Those marks are just for beginners. They are at best a compromise which ignores all the variables and there are plenty of variables. No engineer can put a spot on a flywheel in Detroit, and convince the engine that its position indicates the correct ignition timing wherever the engine may be. The engine knows better. Only the engine knows what is best for it,

TRACTOR CONVERSIONS . . . at Lower Cost!

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Write for detailed information and name of your nearest distributor





Electric tachometer gives accurate ignition timing
by shorting out part of the cylinders.

and it is perfectly willing to tell you.

Correct ignition timing is that which develops the maximum power of that particular engine. It is as simple as that. The same timing will also give you the highest economy, insofar as economy is influenced by ignition timing, and as already stated, it makes more difference than all the poor carburetor adjustment that was ever perpetrated.

You can make a comparative measurement of power in a number of different ways. The old time-honored road test is one of them. It takes a little time, but it is accurate, and it costs far less than to operate with improper timing. You can use a watch with a second hand, or the

speedometer, as the measuring instrument. You should use one or the other—your ear is not good enough.

Road testing for power is simple. Select a piece of road where you can accelerate at wide open throttle from 10 miles per hour to something over 40. If using a watch, measure the time in seconds required to accelerate in high gear from 10 miles per hour up to whatever higher speed is convenient—but use the same high figure for all tests. The writer prefers 50 with passenger cars, while 35 is sufficient with large trucks.

Now move the distributor about 2 degrees, and repeat the test over the same course, in the same direction. Wind and grade both make a difference, so running the course

THE BLODGETT OVEN STORY

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There's a Big Market. 313,000 restaurants in the U. S. do **not** bake on their premises, say recent Government figures. Add to that uncountable neighborhood bakeries, specialty shops, delicatessens, markets and supermarkets, chain and department stores, and so on—and you have a mighty market

There's a Need for Premises Baking. Good desserts are as essential as good soups, good main dishes, good coffee, experts agree essential for health, and for really successful operation

There is Blodgett Equipment for Every Need: Thirty standard models—the most complete and best known oven line. Sectional ovens range from single-deck, 6-pie size to the high-production, 48-pie, 8-pan No. 982; and two multiple-deck (4 shelves, one control) sizes—28" x 28" and 39 $\frac{1}{4}$ " x 28" (outside). **Small places and limited budgets** are as easily cared for as the million-dollar restaurant

There is Now a Way to Produce good baked items in small places, or where trained bakers are not available. New "Premixes" and prepared fruits and fillings make premises-baking easy in Blodgett equipped feeding units. Note the premix ads in the trade papers.

There are Selling Aids and Information. Sectional oven construction with its multiplicity of controls, helps you provide **your** customer with flexibility, operating ease, low operating cost, low investment cost, low floor space requirement. It enables him to follow his baking loads, complex or simple, large or small, just as they occur. **Blodgett literature is designed to help you unearth prospects and to put the story across.** Why not send for a complete set now?

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The G. S. Blodgett Co., Inc. 18 LAKESIDE AVE. BURLINGTON, VERMONT
Please send to me, without obligation, a complete, set of Blodgett Literature, especially, "Bakers Bake Oven" and "Elements of Bake Shop Design".

Name _____
Company _____
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in the opposite direction will only be misleading. Keep repeating until you have the timing set where it gives you the shortest possible running time between the two selected speeds.

If you want to use the vehicle speedometer as your test instrument, you will need two markers on your selected course, one to indicate the starting point, and the other out some distance where you will be up to an appropriate speed when you pass it. Cruise up to your first marker at a steady speed of 10 miles per hour. As you pass the marker, kick the throttle to the floor and hold it there. As you pass the second marker, read the speedometer. Change the distributor 2 degrees and repeat the test. Keep at it until you have the timing set to give the highest possible speedometer reading at the second marker.

A chassis dynamometer, if one is available, does the road test job without going out on the road. The answer is the same, but the procedure is much quicker and simpler. You anchor the vehicle, with the drive wheels on the dynamometer rollers, and you grind out power. The dynamometer operator puts in enough resistance to hold your driving speed to about 30 miles per hour with your throttle wide open. Then the distributor is moved to vary the ignition timing. The dynamometer instruments show the changes in both power and speed. Either meter will tell you when the ignition timing is best, because the highest power and the highest speed show up at the same time. With the fixed resistance in the

dynamometer, highest power necessarily produces highest speed.

This also leads to another method that can be performed indoors, which also gives correct ignition timing. You can load the engine by shorting out some of the cylinders, and then measure the change in engine speed with an electric tachometer as you move the distributor to find the ideal timing point. To be accurate, the test must be performed with enough cylinders shorted out to permit running at wide open throttle in the middle speed range.

The synchronization of the sparks in a distributor with two breaker arms should be checked against the fly wheel markings after changing timing, as the breaker plate sometimes shifts enough to throw one arm off several degrees.

Ignition timing does not "stay put" indefinitely. Wear takes place in the breaker mechanism, both at the points and on the fiber rubbing block which follows the cam. The wear at one place partially offsets the wear at the other, but as a factor of safety they are designed so the wear at the rubbing block is a little faster than at the points. This makes the ignition timing grow steadily later, and makes it advisable to respace the points and reset the timing at intervals. If you are interested in maintaining maximum power and highest economy, these adjustments should be repeated about every 2500 miles in average service, or more frequently with trucks in city service, where the engine miles are much greater than the vehicle miles.

Portable Dictating Machine

Glamorizes Field Reports

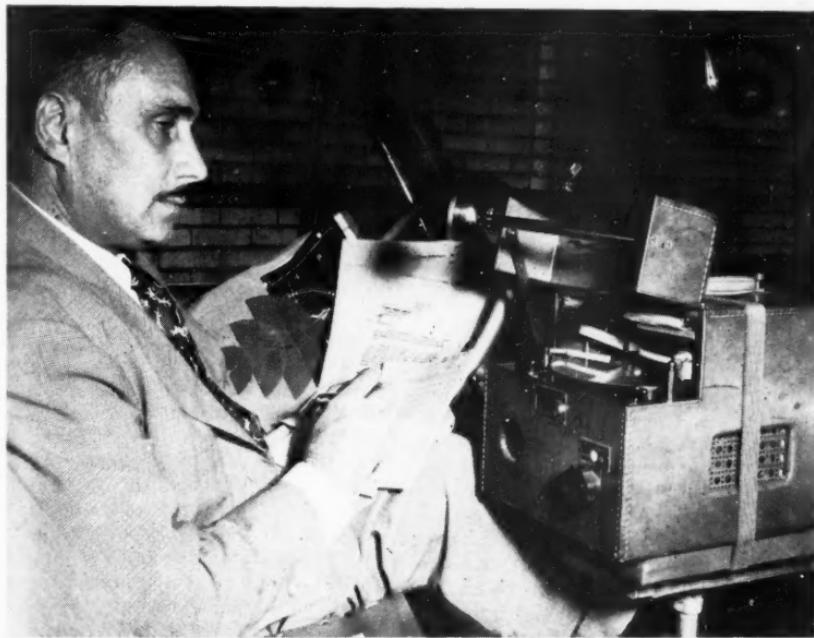
WITH a portable dictating machine mounted in the front seat of his car, Austin Jones, of Toledo, Ohio, can get all the details for his call reports on record immediately after making the calls.

"The average field man usually makes notes right after the call and then tries to decipher them later. It may often be two or three days before he gets a chance to transcribe

By C. DALE MERICLE

his notes, but with this device I can get the facts down immediately," explains Mr. Jones, who travels a four-state territory for Kerotest Manufacturing Co., of Pittsburgh, producer of valves and fittings for the refrigeration, gas, and other industries.

The machine is also useful in di-



Close-up shows Austin Jones dictating a "call report" on the portable "Sound-Scriber" mounted in the front seat of his car.

rectly recording suggestions or complaints of customers.

Mr. Jones devised a light-weight, removable stand for the front seat of his car on which a portable "Sound-Scriber" machine equipped with a playback arrangement is mounted. The machine takes three sizes of small, plastic recording discs that will hold 10, 20, or 30 minutes of dictation.

Special mailing envelopes permit notations to show the length of letters, spelling of names, or other instructions.

"Usually," Mr. Jones explains, "I dictate the reports while I'm on the road and then take the discs back home to Toledo with me where they are transcribed. But if I'm in a hurry on a special disc, I'll simply send it in to the Kerotest headquarters in Pittsburgh.

Good for Interviews, Too

"The machine is very useful in recording interviews, too. I take it into the office, set it on a desk or table, and the machine will pick up anything said in a normal tone of voice within a range of 10 ft. I've used it to take down conferences with engineers over suggested design changes in our products. We get out the blueprints, refer to them by number, and the whole discussion about the blueprints is recorded. This not only gives our factory the dope on the changes but reveals the thinking behind them."

Because the machine operates on 110-volt current, an inverter has been wired into the car electrical system to change the 6-volt d.c. current supplied by the car battery into 110-volt, 60-cycle a.c. current. A cord from the dictating machine is plugged into the special outlet mounted beneath the dashboard.

"With this 110-volt current supply

in the car I can also plug in an electric shaver or radio, in fact, any 110-volt device that doesn't draw more than 100 watts," Mr. Jones said.

GAMA Expects 20% Increase In Appliance Equipment Sales

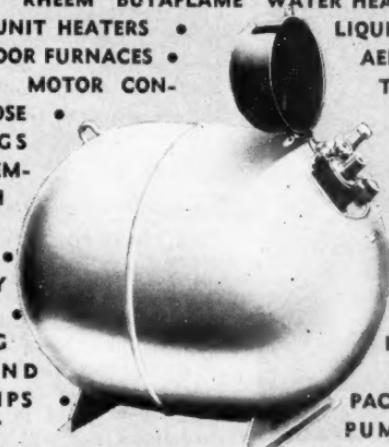
Sales of gas appliances and equipment for all gases in 1950 will exceed 1949 totals and, in every division of the industry, will far exceed and in some classifications, more than double pre-war averages, according to a recent poll made among the 550 gas appliance and equipment manufacturer members of the Gas Appliance Manufacturers Assn., states Stanley H. Hobson, president. This will bring industry sales close to its 1947-1948 all time peaks.

To reach these goals, manufacturers will intensify sales training, improve dealers' sales and introduce more creative selling technique among their dealers' outlets and salesmen. Approximately 50% of the manufacturers polled intend to increase their sales forces.

Analyses of manufacturers' estimates of 1950 sales indicate an expected 20% to 30% increase in gas range sales over 1949. Greater increases are expected in the sales of incinerators, refrigerators and clothes dryers.

Sales of gas-fired central heating equipment, manufacturers expect, will be 30% over 1949. Floor furnaces and direct heating equipment are expected to be about 20% greater. Automatic water heater sales are also expected to make substantial gains. With approximately 5,500,000 residential customers, representing a growth of 600% in the past 10 years, LP-Gas users in 1949 purchased 24% of all gas ranges produced; 12% of all automatic gas water heaters

A. R. WOOD BROODERS • BULK PLANT EQUIPMENT • BRUNNER COMPRESSORS • MINNEAPOLIS-HONEYWELL CONTROLS
 • BOSS COUPLINGS • ROLAGRIP COUPLINGS • CYLINDERS •
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 FIRE EXTINGUISHERS • LPC BRASS FITTING STOCK BINS AND
 CABINETS • WALL OR FLOOR FLANGE • DEEP FAT FRYERS •
 SPACE HEATERS • GAS-A-FIRE TOBACCO CURERS • STOCK TANK
 HEATERS • RHEEM "BUTAFLAME" WATER HEATERS • REZNOR
 SUSPENDED UNIT HEATERS • LIQUID TRANSFER PUMP
 UNITS • FLOOR FURNACES • AEROQUIP HOSE & AS-
 SEMBLIES • MOTOR CON- TROLS • HEWITT
 PROPANE HOSE • HOT PLATES •
 STAMPINGS HOUSINGS •
 ROCKWELL-EM- CO "OO" METERS
 PITTSBURGH PRINT-O-METERS
 MOISTURE TRAPS AND
 ADAPTORS • PAINT •
 PAINT SPRAY EQUIPMENT •
 PIGTAILS • CORKEN PUMPS
 • VIKING HAND HAND PUMPS •
 KRUG HAND PUMPS • PUMPS • EDSON
 LER UNIT PACKAGE BOTTLE FIL-
 FILLING PUMP • PUMP • TRACTOR
 VAPOR PUMPS • CLIMAX REGULATORS • FISHER REGULATORS
 • SAFTI-FLAME EQUIPMENT • FAIRBANKS-MORSE PORTABLE
 PLATFORM SCALES & PRECISION INDICATOR • RECTORSEAL #2
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2602 Ed Creighton Blvd. Omaha, Nebraska	364 Nelson St., S. W. Atlanta, Georgia	217 East Archer Tulsa, Oklahoma

Supply Stores & Warehouses:

manufactured, and similar high percentages of other gas appliances. The LP-Gas industry provides cooking service for more rural and "beyond the main" homes than any other automatic fuel.

L. L. Luxon Named Technical Editor, Butane-Propane News

Of interest to all readers, and especially to the many dealers who from time to time ask advice of **BUTANE-PROPANE News** upon their operating problems, is the selection of Lester L. Luxon as technical editor of this publication.

Mr. Luxon is associated with the American Liquid Gas Corp., Los Angeles, where he has been serving in an engineering capacity as chief engineer of the gas plant equipment division since 1944, except for a period in the navy, and has specialized in industrial and bulk plant installations. Outstanding among his assignments has been the LP-Gas war plants for Basic Magnesium Corp., Henderson, Nev., and the Inyo-Kern Naval Ordnance Test Station where propane was installed for all housing and laboratory uses.

At Basic Magnesium he was staff engineer and in charge of design, specification and acquisition of furnace, fuel handling, and storage equipment.

Mr. Luxon, a graduate of Ohio State University in metallurgical engineering, is also a mechanical engineer and has specialized in fuels and



L. L. LUXON

their combustion. Before joining American Liquid Gas he was assistant superintendent of the fuel department of the Gary, Ind., works of the Carnegie Steel Corp.

The appointment of Mr. Luxon to the technical editorship of **BUTANE-PROPANE News** fills the vacancy caused last July by the death of Harold W. Wickstrom, who had been technical editor since the first issue of this magazine and had acted in a similar capacity for the Handbook Butane-Propane Gases since its first edition in 1932.

Nova Scotia Firm Installing Bulk Plant to Serve Wide Area

Bulk plant facilities to be in operation early in October have been installed by the Blu-Flame Gas Co., Ltd., Sydney, Nova Scotia, according to word from F. W. McKnight, vice president of the company.

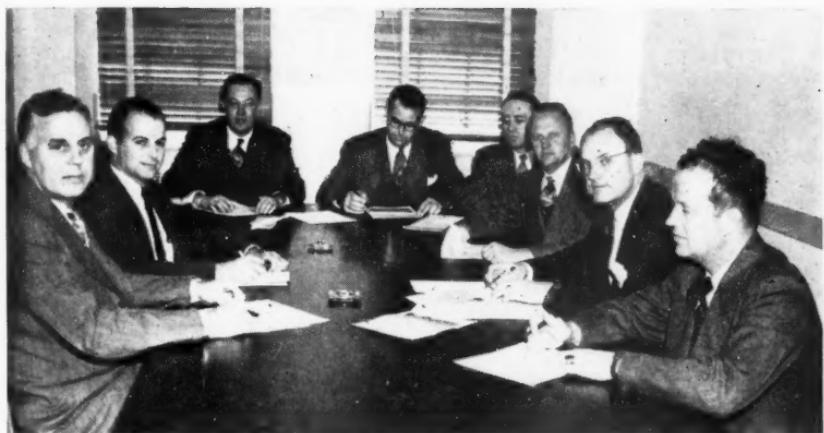
The new plant is located at Leitches Creek and will supply the island of Cape Breton and the province of Newfoundland.

Other officers of the Blu-Flame company are J. P. Steinhauer, president; A. J. Cockell, secretary-treasurer, and C. Roy Mason, director.

Esso Standard Wins Award For Best Annual Report

In the final ratings of an independent board of judges for the Financial World Annual Survey, Standard Oil Co., (New Jersey), was judged as having the best annual report for the second consecutive year of the petroleum industry.

The bronze "Oscar of Industry" trophy was presented to Eugene Holman, president of Esso Standard, at the annual awards banquet in the Hotel Statler, in New York, Oct. 31.



Special LP-Gas industry advisory committee to Southern Technical Institute (left to right): E. H. Kahler, American Stove Co.; Dan Lynch, Lennox Furnace Co.; L. V. Johnson, director, Southern Technical Institute; F. A. Rives, chairman, Automatic Gas Co.; K. T. Davis, Bryant Heater Div.; R. H. Wherry, Gas Equipment Supply Co.; John Knox Smith, LPGA; C. M. Stroup, Skellygas Div., Skelly Oil Co.

Fred Rives Heads Committee For Southern Technical Course

A special LP-Gas industry advisory committee to the Southern Technical Institute met in Chamblee, Ga., Nov. 4, to devise ways and means of attracting students to the gas fuel technology course, the first semester of which began in September.

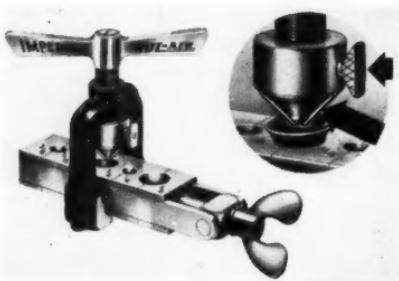
Headed by Fred A. Rives, of the Automatic Gas Co., Columbus, Ga., the committee feels that the liquefied petroleum gas industry would benefit greatly by having a reservoir of trained personnel available. These trained men, technicians after the 18-month course, have never been available to the industry before.

The course, approved under the G. I. Bill of Rights, is open to graduates of accredited high schools. Tuition is \$1800 for Georgia residents

and \$2200 for non-residents. Other members of the committee include: E. H. Kahler, American Stove Co.; Dan Lynch, Lennox Furnace Co.; L. V. Johnson, director, Southern Technical Institute; K. T. Davis, Bryant Heater Co.; R. H. Wherry, Gas Equipment Supply Co.; John Knox Smith, LPGA, and C. M. Stroup, Skelly Oil Co.



PRODUCTS



Flaring Tool

Imperial Brass Manufacturing Co.,
1200 W. Harrison St., Chicago.

Model: Rol-Air No. 355-F.

Application: For flaring and burnishing copper, brass and aluminum tubing for making up S.A.E. flared tube joints.

Description: The tool has three rollers embodied in the spreader cone and is said to roll flares "in the air" because the flares are not formed against a flaring block. Because the flare is not formed against the die, the original wall thickness is maintained giving a stronger flare which is said to stand up longer under vibration.

After the tubing is flared, it is burnished by turning the operating handle two more revolutions with control knob in burnishing position.

The tool has a die holder with heat-treated sliding dies, designed so they will not score the tubing, and features single nut clamping. It flares $\frac{1}{4}$, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{5}{8}$ in. OD tubing.

Gas Brooder

Brower Manufacturing Co., 209 N.
3rd St., Quincy, Ill.

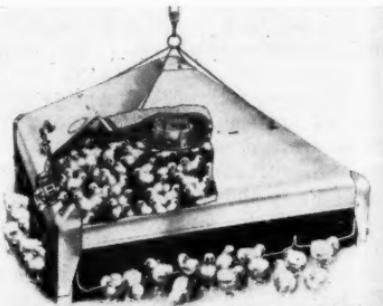
Model: "Super-Heat" Brooder.

Application: Although designed for brooding chicks, it may be used for turkey poult also.

Description: The brooder, equipped with a Robertshaw 100% shutoff valve, has a sturdy canopy constructed of heavy gauge galvanized steel. The canopy is streamlined and has steep pitch to make it absolutely roost-proof.

One-in. thick fiberglass insulation packed between the deflector plate and top of hover conserves heat and directs it against the baffle plate, where it is spread out evenly to chicks. Ventilating slots provide ample circulation, insuring proper combustion and fresh air and eliminating dead air pockets.

The heating unit consists of four main parts—the burner, heat radiants, heat deflector and baffle plate. The 6-in. cast aluminum burner has



BUTANE-PROPANE News

a thermostat, regulator and pilot light which insure trouble-free service. Burner can be removed for cleaning.

The clay radiants form a 12-in. diameter radiator which absorbs heat from burner and radiates it down to chicks. The heat deflector helps to radiate and distribute heat.

The Brower brooder burns LP-Gas as well as natural and manufactured.

to support large utensils without crowding.

Large storage area is provided in a bin under cooking top and two handy roller bearing service drawers.

Tar Pot Outfits

Ransome Co., 4030 Hollis St., Emeryville, Calif.

Model: No. 3.

Application: Designed specifically for melting and pouring tar on pipelines. Can also be used for melting similar compounds.

Description: The Ransome tar pot outfit comes in three sizes: 3, 5, and 7 gals. (Shown in Model No. 3 with 5-gal. pot.) Outfit is mounted on 32-in. by 14-in. aluminum base. It is light enough to be carried by one man. Available without base if desired.

Each tar pot is equipped with a bale for carrying and a heat-resistant handle to facilitate easy pouring. The small spout assures the right flow of tar for wrapping pipe up through 4-in. size.

Unit will bring tar to working consistency within 30 minutes. The 5 gals. of propane is ample for a week's operation. The outfit includes a 5-gal.



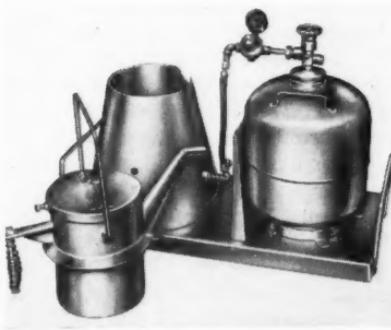
High Oven Range

**Hardwick Stove Co., Cleveland,
Tenn.**

Model: Challenger.

Description: Outstanding feature of this Hardwick model is the high oven, available on either the right or left side of the range. The height of the oven also makes a higher broiler compartment possible.

The 4-burner cooking top is hinged for easy cleaning, adjusting or servicing. Unbreakable, non-tilting and non-sliding stainless steel burner grates are provided. They are widely spaced



ICC propane cylinder, pressure regulator, 4-ft. high pressure hose, control valve, burner, tar pot, and skirt.



Carbonic Gas Cylinder

Fine Products Co., 185 N. Wabash Ave., Chicago.

Model: Rapid "Duz-All."

Application: Among the many uses of this unit are pressure-testing lines, blowing out coils and condensers, inflating tires, and extinguishing fires.

Description: Each unit is equipped with fire horn, connecting hose, tire adapter, flare adapter and standard CO₂ charging connections. The cylinder has a 5-lb. CO₂ capacity and is built and stamped to ICC-3AA-1800 specifications.

The cylinder is small enough for carrying on service trucks for immediate use in case of fire at installations. To extinguish fires, the fire horn is attached and the cylinder inverted. A pressure of 900 lbs. psi at 75° is furnished by this unit.

Hydraulic Pump

Baker's, Malone, N. Y.

Model: Baker Hydraulic Methanol Pump.

Application: Designed for use in pumping alcohol into butane or propane tanks.

Description: This pump will work against head pressures of 200 lbs. psi; therefore, alcohol can be pumped into tanks already containing LP-Gas.

Methyl alcohol is used in the pump. When a freeze-up occurs, the desired amount of alcohol is pumped from the Baker pump into the storage tank. The pump holds two gals. of liquid, enough for over a dozen freeze-ups.



Heating System

South Wind Division, Stewart-Warner Corp., Indianapolis, Ind.

Model: Sealed Heat Unit No. 988.

Description: This is a new type of residential heating system which em-



ploys the principle of "Sealed Heat." By this means the gas is burned in a hermetically sealed combustion chamber. Combustion air is drawn from the outside by means of a blower which also discharges the combustion products to the outside through a small sealed vent.

Room air is circulated by means of a centrifugal blower rated at 200 CFM. All moving parts are mounted on a common frame equipped with resilient springs and rubber shock absorbers for quiet operation. Btu rating is 31,000 per hour. Cabinet dimensions are 11 in. x 14 in. x 32 in.; small size permits versatility in choosing installation site.

Each unit is capable of heating about two and a half rooms—two heaters will heat a small home comfortably.

LP-Gas Regulator

C. A. Norgren Co., Denver, Colo.

Model: Series 2E.

Application: Designed for industrial use and for large domestic applications requiring a primary stage regulator.

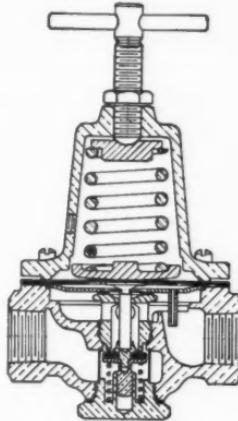
Description: This regulator reduces primary pressures of up to approximately 250 psi to working pressures of up to 50 psi. It is listed by Underwriters' Laboratories.

Other features include: Baffle plate

with siphon tube for greater flow with less pressure drop; specially vented for use with volatile liquids; responds rapidly to sudden demands for greater volume without excessive momentary pressure drop; and protects against shocks and chatter.

Its diaphragm is of synthetic rubber, reinforced with nylon cloth. The vent hole in bonnet is tapped for tubing to prevent dirt and water from entering.

Available in $\frac{1}{2}$ -, $\frac{3}{4}$ - and 1-in. pipe thread sizes. Ports of $\frac{1}{2}$ -in. size may be bushed down for $\frac{1}{4}$ - and $\frac{3}{8}$ -in. pipe thread sizes.



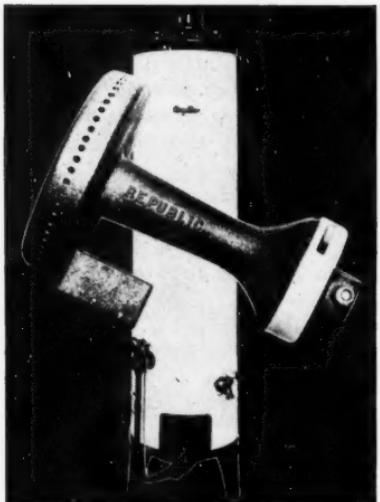
Water Heater Burner

Republic Heater Co., 2231 Randolph St., Huntington Park, Calif.

Model: "Even-Glo" Burner.

Application: To be used with Standard and Special models of the Republic Heater Co. water heater lines.

Description: This mushroom-type burner is a compact, one-piece unit constructed of solid cast iron. Re-



public engineers claim a greater efficiency with this burner due to the proper balancing of the mixing head and venturi with the port area.

An adjustable air shutter permits precise adjustment of oxygen for all types of gases. A balanced mixing chamber facilitates positive control for LP-Gases.

Other features include a fixed pilot tip anchorage which prevents movement of adjustment while in transit and assures positive lighting at all times.

Forced Air Furnace

Coleman Co., Inc., Wichita 1, Kan.
Model: 82B.

Application: For home heating.

Description: The new furnace, engineered for use with Coleman's pre-engineered "Blend-Air" system of home heating, has an input rating

of 95,000 Btu's per hour and an output of 76,000 Btu's per hour.

Air delivery rate when used with a conventional duct system is 930 cu. ft. per minute at .25 in. water gauge. When used with the Blend-Air system, the blower is adjusted to deliver 615 cu. ft. per minute with



an equal volume recirculated by blending for a total circulation of more than 1200 cu. ft. per minute.

The furnace, finished in tan baked enamel, is compactly designed and can be installed in a recreation or utility room, as well as in the basement. The unit requires only five sq. ft. of floor space.

The Coleman "Even-Flo" blower unit, "Blu-Arch" burner, and a filter frame which can be installed on either side or in the bottom of the furnace, are additional features of the new unit.

Overall dimensions are: 62 $\frac{3}{4}$ in.

out-
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930
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sted
with

NEW...

- ▶ Flash tubes
- ▶ Multi-burners
- ▶ Non-clog pilots

A. R. WOOD "Radiant" Gas Brooders

...the talk of the poultry industry



- Safe
- Clean
- Durable
- Dependable
- Economical

New improvements plus quality construction make the A. R. Wood Brooder the outstanding gas brooder on the market today. Poultrymen say so . . . LP-Gas Dealers agree.

New safety, new economy . . . non-clog, singly adjustable, stainless steel pilots and pilot tips . . . patented flash tubes connecting all multi-burners (one pilot will flash all burners into action if other pilots go out) . . . automatic thermostat control for steady radiant heat.

New national advertising campaign to pre-sell your customers for you.

...and it all adds up to **PROFITS** for YOU!

Write for proposition for dealers

A. R. WOOD MFG. CO.
SANTA CRUZ, CALIFORNIA LUVERNE, MINNESOTA

high; 30 in. deep; 24 in. wide. The furnace has been approved by the American Gas Assn. for use with LP-Gas, natural and manufactured.



Water Heater Calculator

Everett A. Kelsey, Box 312, Montclair, N. J.

Model: Automatic Gas Water Heater Selector.

Application: To determine proper size of water heater tank and burner input.

Description: A slide-rule like calculator, all the operator need know is the prospect's kitchen equipment, number of bathrooms, and size of family. With this information placed on the slide rule, the family demand for hot water is then shown.

On the reverse side, with use of the peak load figure, is determined the tank size in gallons and the Btu input per hour. Sizes and Btu's are given for both 80° and 100° rise.

According to the manufacturer, the information shown on the rule is identical with the figures used and distributed throughout the gas industry by the American Gas Assn. The computation shown on it and

the results obtained have been approved by the water heating committee of the AGA.

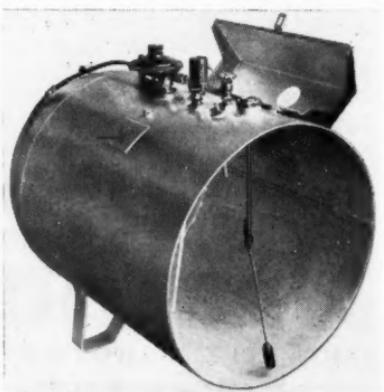
The calculator is made of a durable plastic and measures 2 in. by 6½ in. It is encased in a heat-sealed plastic case.

System Guard Box

Buehler Tank and Welding Works, 5000 Pacific Blvd., Los Angeles.

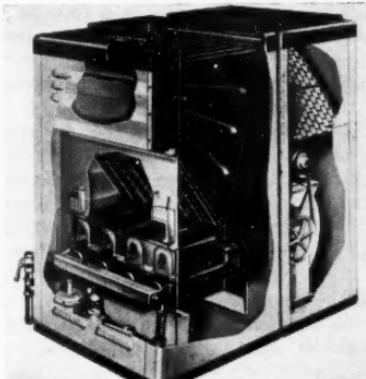
Description: Larger guard boxes than ever before used on LP-Gas plants and systems are now standard equipment on all Buehler above-ground LP-Gas plants. Measuring 28 x 11 x 8 inches, these heavy welded steel guards house under one cover all equipment necessary to make a complete gas plant, including both the primary and secondary stage regulators.

The heavy guard box hinges back out of the way, shown, for filling and other maintenance work. Special type hinges make guard easily removable. Magnetic float gauge is located inside the box near the end



for easy reading without raising the guard. A hasp is provided for locking.

Buehler's new fitting arrangement places the filler, vapor and outage valves directly in front for greater accessibility and safety.



Forced Air Furnace

Lennox Furnace Co., Marshalltown, Iowa.

Model: KH8-160 and KH8-200.

Application: Industrial installations.

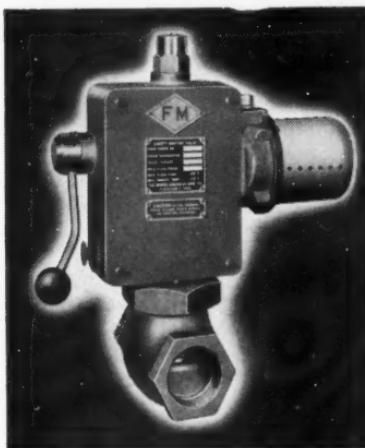
Description: These new forced air heating units are in the 160,000 and 200,000-Btu input size — clusters of these will make up almost any industrial size.

One central combustion chamber contains the burners in all sizes. Coming off the front of this chamber is a cluster of narrow "clamshell" heat extractors which force the combustion gases into a thin layer, thus giving maximum heat exchange to the heating surface. In spite of the compactness of the unit, heating surface temperatures stay below the maxi-

mum safe temperature allowed by the AGA.

A single port type burner is used for each 40,000 Btu of input and the burner can be adjusted for any and all gases, including LP-Gas, manufactured, mixed, and natural.

The units are shipped completely erected within their cabinets. The heating section is 27% in., front to back, allowing ample clearance through any standard door. The heating section of the KH8-160 and KH8-200 have been approved by the AGA as duct heaters as well as central furnaces.



Safety Shutoff Valve

North American Manufacturing Co.,
4455 E. 71 St., Cleveland.

Model: Series 21.

Application: This valve has been designed for the protection of industrial furnaces against dangerous accumula-

tions of gaseous or liquid fuels in the event of a power failure.

Description: The valve stops the flow of any gas or liquid instantly when the current to its solenoid is interrupted, remaining closed until the trouble is corrected, at which time the valve is reset manually.

Any number of switches wired in series with the solenoid can protect the installation. It cannot be wedged or propped open with power off since the resetting handle is independent of the valve stem.

Featuring a globe-type, soft-seating valve, Series 21 can be had with all iron body and internals for use with corrosive gases or liquids. They can be furnished with chain reset wheels for overhead mounting and with auxiliary switches for independently powered alarm systems.

Available in sizes from $\frac{1}{4}$ in. through 6 in., they may be equipped

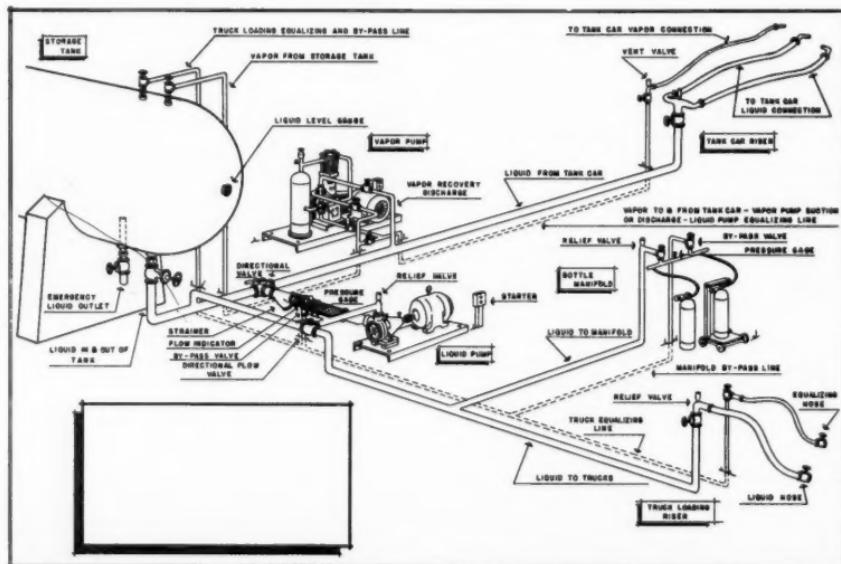
with solenoids of 110, 220, 440 volts and 60, 50, and 25 cycles.

Bulk Plant Drawing

The principles of LP-Gas transfer—liquid and vapor—and flow sheet, have been put together in a four-page booklet by Corken's, Inc. Three pages of explanation are given while the fourth page is devoted to a diagram of the bulk plant.

The interpretation of the drawing is broken down into a discussion of each function. Among them are storage tank; liquid pump; tank car riser; truck loading riser; bottle manifold; liquid lines; vapor lines; and electrical.

This booklet is available from Corken's at 206 E. Grand Ave., Oklahoma City, Okla., free upon request.



Use of Special Couplings In Town Plant Distribution System

The successful use of special couplings in making up gas lines is to be found in the experience of the butane-air gas town plant in Canajoharie, N. Y.

The butane-air gas plant at Canajoharie, together with the intermediate pressure distribution system was installed in 1931. This plant is essentially a mixing and storage plant in which the liquefied petroleum vapors are blended with air to produce 537 Btu city gas. The city gas is then compressed and stored in high pressure storage vessels from which it flows through pressure regulators into the distribution system.

Piping and connections at the plant both inside the mixing and control rooms and all out-of-door piping to the liquid and gas storage tanks, etc., were made up almost entirely with ordinary screwed fittings and joints. The distribution system, however, was of welded steel construction with special tie-ins, connected by Dresser couplings at points where it was impracticable to attempt welding.

Had Little Pipe Joint Trouble

From 1931 to 1936 very little pipe joint trouble was experienced at either the plant or in the distribution system and there were practically no extensions or alterations to the distribution system.

After 1935 several gas main extensions and service lateral installations became necessary, and at about this same time the need for additional liquid storage and mixed gas storage

By J. H. WILCOX

Gas Superintendent, Mohawk, N. Y., Area

became evident. It was also at this time that several of the screwed connections and fittings at the gas plant began to show leakage and there were many failures of the fittings, themselves, especially screwed elbows and tees. In all repair and maintenance work at both the gas plant and in the distribution system, repair and replacement fittings were connected up with Dresser couplings, style No. 38. All main extensions and service lateral installations were also connected by means of these same couplings.

Dresser Co.'s grade No. 29 gasket was the standard gasket until about 1938, at which time their armored tip, grade No. 27, was adopted as the standard gasket for our needs. These couplings were used for all types of service. That is to say, on liquid butane lines, on vapor lines, as well as on the pipe lines carrying mixed gas, including the discharge piping from the reciprocating compressors. There has never been a failure of any coupling or its gasket, and what is especially impressive is the ability of these couplings to hold back the light penetrating oils which are always present in systems of this kind and which seem to work out through flanged joints and screwed joints even when such joints test bubble tight with soap suds.

Where rigidity of the connections

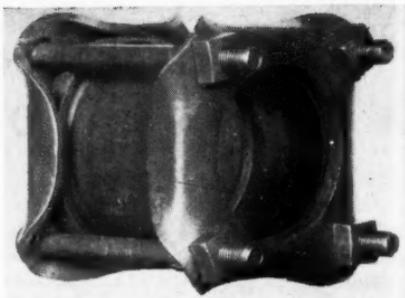
or trim and neat appearance for aboveground piping have to be a principal consideration, welded connections with a minimum of flanged joints at valves have been used but in almost all other installations, whether an entirely new project or a maintenance job, it has been clearly demonstrated that the Dresser coupling is particularly well adapted for this type of service.

During the past three or four years most of the couplings used in sizes 2" and under have been the newer style No. 90 with the same grade No. 27 armored tip gaskets. This type of coupling has also given the same excellent performance as has the older style No. 38.



Style 90 coupling.

In addition to the standard line of couplings, repair sleeves, fittings, etc., the Dresser Co. has designed and furnished some special split repair sleeves which have in all cases proved equally satisfactory. One especially impressive installation was a split repair sleeve which they designed and built of welded steel construction for the purpose of enclosing a 24" manway and its flanged cover plate on the liquid storage tank. Early in 1938 this flanged cover developed serious leakage due to disintegration of the gasket and since at that time there was no other liquid storage tank installed at the plant, it was imperative to control



Style 38 coupling.

this leakage without taking the tank out of service.

The design presented a very difficult problem because clearances between the manway casting, the tank shell, and the cover flange were very small and large rivet heads and bolt heads took up most of this clearance. At the time the company had no design for a split repair sleeve of this type, but within two weeks after receiving the necessary field measurements and data, they fabricated a split sleeve which enclosed the leaking flange completely and which tested and remained bubble tight until it was removed in 1946, at which time the tank was taken out of service for a complete internal inspection and cleaning.

Jordan D. Wood Named UDI Advertising Manager

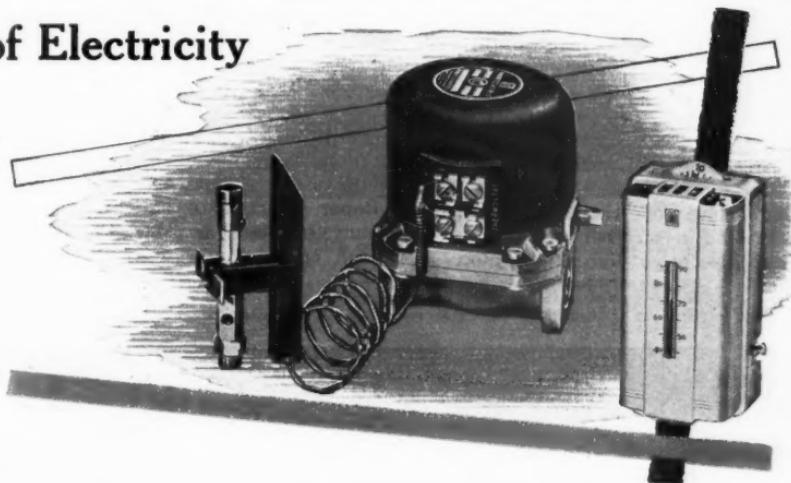
Jordan D. Wood has been named new advertising manager for Utilities Distributors, Inc., of Portland, Maine, one of New England's largest bottled gas distributors.

Mr. Wood takes over from Louis F. Moore, former advertising and sales promotion manager, who continues in his sales promotion post.

THE HONEYWELL POWERPILE*

New Self-Powered Gas Package

Provides Fully Automatic Temperature Control . . . Requires No Outside Source of Electricity



THIS new gas package set gives fully automatic heating control without using any outside source of electricity. It uses Honeywell's newly developed Q182 Powerpile, which generates sufficient electrical current to operate the control system. The Powerpile consists of multiple thermocouple elements which generate electrical energy through the temperature difference between the Powerpile tip (which is placed directly into the pilot flame), and the cooler end, which is away from the flame. Should the pilot flame fail, the control system becomes de-energized, and the gas control valve closes, thus eliminating the need for additional safety pilot.

This system features the new T804 Thermostat, designed with a special mercury switch for use on extremely low current circuits. For another industry "first", Honeywell presents a thermostat which will improve comfort by heat leveling — without using an external source of electric current. Minneapolis - Honeywell, Minneapolis 8, Minn. In Canada: Leaside, Toronto 17, Ont.

MINNEAPOLIS
Honeywell
CONTROL SYSTEMS

*Trade Mark

THE TRADE



JOHN PANKOW

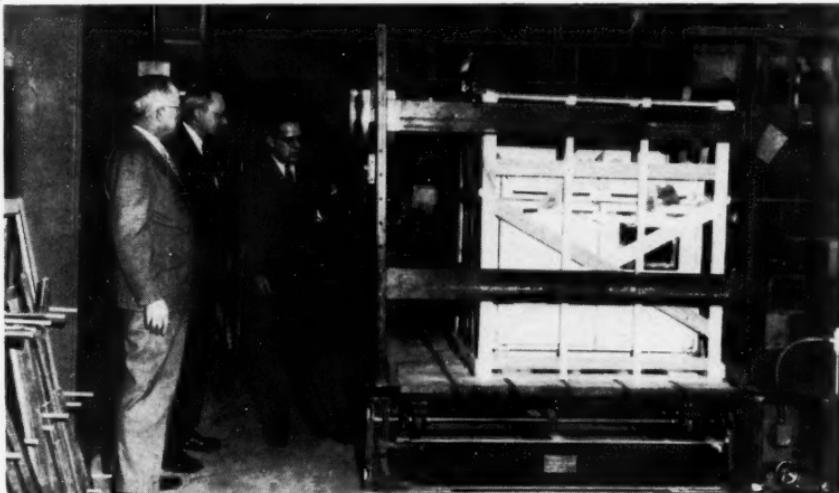
John C. Pankow, director of sales, Detroit-Michigan Stove Co., died at Cottage hospital, Detroit, Nov. 30, after a brief illness.

He was chairman of the National Committee for LP-Gas Promotion, a former commodore of the Detroit Yacht Club and a member of the Detroit Sales Executive Club. In his 38 years with his company, he rose from the

position of office boy to director of sales of the company's domestic and commercial ranges.

New crating and shipping methods developed by the Geo. D. Roper Corp. to prevent damage to Roper gas ranges while en route to retailers everywhere, recently received the approval of the National Safe Transit Committee, sponsored by the Porcelain Institute. The committee awarded Roper a certificate, entitling the company to place an official sticker on each crated gas range.

Under the new Roper packaging



L. E. Richmond and H. A. Schmitt, left, both of the Illinois Central Railroad, listen to an explanation of a package tester by M. A. Ritchie, Roper engineering coordinator.



Commander Harry C. Rowe (CEC), U.S.N., Dept. of Navy, Bureau of Yards and Docks, Washington, D. C. (left) and W. C. Schroeder, chief, office of synthetic liquid fuels, U. S. Dept. of Interior, Bureau of Mines, Washington, D. C., inspecting a 51 $\frac{1}{4}$ in. diameter segmental butane gas sphere fabricated at Lukens flame-cut and pressed segments for the LP-Gas industry photographed during a recent executive visitation at Lukens Steel Co., Coatesville, Pa. Their escort is C. A. Carlson, Jr., of Lukens Steel.

program, an extensive series of tests is used with each type of crate. One of the testing devices is a heavy platform, mounted on a mechanical agitator, creating a pitch-and-toss motion. By changing various controls, speeds of trains and trucks, and different degrees of roughness of track or road are simulated.

Another is an incline tester which measures the exact relationship of impact to car speed.

In still another test enough gravity force is applied to the package to make an aviator black out.

Upon the completion of each test, both the range and the crate are checked for any and all kinds of damage.

Edward L. Stauffacher has been named assistant to Wm. H. Merritt of Chicago, vice president of Cities Service Oil Co. (Del.), and manager of its marketing division, according to an announcement by A. W. Ambrose, of Bartlesville, president of the company.

Mr. Stauffacher, also headquartered in Chicago, was promoted from the position of chief engineer and superintendent of operations in charge of the company's marketing properties. A long-time Cities Service employee, he was first assigned to the junior engineer training program of the company and held positions in all phases of its integrated operations. He obtained broad experience in natu-

NEW!

NOW L-P EQUIPMENT THAT SELLS ITSELF!



Here it is, a new merchandising idea by Weldit, a plan that will make more profits for you.

An attractive, self-merchandising, multi-colored counter or wall display unit, equipped with quick release mountings, complete with the following Weldit Torches:

(1) C-48-P. Weldit Full Weldimatic Trigger Control Torch. (L-P gas and atmospheric air.) Adjustable pilot light, needle valve adjustment. For heating, soldering and yes, even chicken singeing.

(1) C-48-WP. Weldit Torch. Same as above, only non-automatic.

(1) No. 484 Large Burner L.P.

(1) C-48-B. Weldimatic Torch with No. 470 Burner. Uses propane gas and atmospheric air, provides flame 3' wide at 35 lbs. pressure for paint removal from wood or metal. A hot sales number.

(1) No. 4826-D. Safety Check Tank Connection. Shuts off gas flow if hose becomes ruptured or disconnected when tank is open. 12 ft. of Hose included with unit.

Each of the above items can be replaced — just reorder by number on the torch.

Remember, all Weldit L-P Torches are designed to operate at full tank pressure adjusted at torch valve (no regulator is needed). Each Weldit Torch is equipped with a filter device that eliminates foreign matter.

This is your big opportunity to cash in on greater torch sales. There is a huge market for L-P Torches and if you display them, you will sell them.

Cash in on this plan. Order your self-merchandising display board unit today at this special price — \$35.00, retails for \$60.00!

Weldit
INC.
SINCE 1918

994 OAKMAN BLVD.

DETROIT 6, MICH.

ral gasoline operations, production, refining, chemical manufacture, pipeline and general engineering and construction before becoming superintendent of the company's natural gasoline division.



PAUL PALMGREN



FRED ANGIER

J. F. Ray, vice president in charge of sales, General Controls, Glendale, Calif., manufacturers of a complete line of automatic, pressure, temperature, level and flow controls, has announced the opening of new and extensive factory branch office facilities in Minneapolis, Buffalo and Baltimore. This, says Mr. Ray, is in line with the established company policy to continue expansion of its sales and service facilities as rapidly as is practical.

General Controls now has factory branch offices in 21 major cities from coast to coast. These combine with a thoroughly qualified distributor or



R. R. ROSELL, JR.

RIMCO HOODS

★ last longer
★ save you money

DAV

YOUR NAME
WILL BE CAST HERE

PROGAS

ELECTRO GAS

HICKSGAS

BLUE STAR

X-ANES

HOME GAS

TRY-GAS

RIMCO HOODS LAST LONGER

Because they are cast aluminum—
3-16" thick. You can't dent, bend, or
break a Rimco Hood. Equipped with
a covered hinge cast into the hood.
No rivets to rust out—all rust proof
aluminum.

AND SAVE YOU MONEY

A few cents more gives you extra
years of trouble free service. Cuts
down painting and replacement
costs. Pleasing to the eyes, they
please your customers. You will get
new satisfied customers with your
name or trade-name cast on Rimco
Hoods in large raised letters that
will never wear off. An excellent
advertisement for your business.



ROCK ISLAND
METAL FOUNDRY, INC.

Established 1910

ROCK ISLAND · ILLINOIS

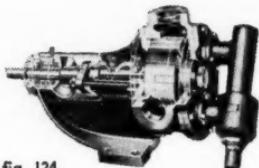


fig. 124

L-P GAS PUMP (cut-away) view

For smooth, efficient handling of all types of clean liquids, there is a Viking pump built in the size and style to meet your needs.

Viking pumps are especially built for L.P. gas handling in bulk plant, truck mounting and hand drive styles.

*Ask for free
bulletin 2302B today*



VIKING
PUMP COMPANY
Cedar Falls, Iowa

See Our
Catalog In
SWEETS

ganization in a large number of key cities to provide sales and service facilities for users of General Controls.

Named as branch managers in the newly opened offices are R. Roger Rosell, Jr., Minneapolis; Paul A. Palmgren, Buffalo, and Fred H. Angier, Baltimore. All are graduate engineers and thoroughly experienced in the field of automatic controls.

W. E. Lunger, district manager of the Huntington, W. Va., plant of the American Car and Foundry Co., has been appointed assistant vice president in charge of production, with headquarters in New York.



W. E. LUNGER

Succeeding Mr. Lunger at Huntington is J. E. Koontz, now assistant district manager of that plant.

Mr. Lunger studied at Columbia University and joined ACF in 1914 as a shop apprentice at the Berwick, Pa., plant.

Earl D. Weiland, aged 48, credit manager of The Estate Stove Co., Hamilton, Ohio, died suddenly of a heart attack Nov. 18 at his home in Hamilton.

Mr. Weiland had been associated with The Estate Stove Co. during his entire business career, joining the company in 1922 as assistant credit manager. He was appointed credit manager in 1937.

Estate's credit department is now under the supervision of the company's comptroller, Gordon Kemp.

Here are the

PREWAY Champions 1950 L.P. Gas Ranges

that give you selling punch...and profit

You'll be a factor to reckon with in appliance sales with the Preway line . . . for never before have gas ranges that offer so much cost so little.

You can baffle anyone in the low and middle brackets with this hard-hitting line . . . stand up to them in style, meet them in construction, hammer them with utility features and knock them out with price.

This champion line will be at the Chicago Winter Market. Point for it — and if you can't attend just phone, wire or write

PRENTISS WALTERS PRODUCTS CO.
1150 Second St., N.W., Wisconsin Rapids, Wis.

Space 549A
American
Furniture Mart
Chicago



Many features to
surprise and
delight women



Liquefied Petroleum Gas
Cities Service Oil Co.

A DEPENDABLE SOURCE
UNIFORM PRODUCTS
A CAPABLE SUPPLIER
TWENTY YEARS' EXPERIENCE

IN LP GAS ALSO

CITIES SERVICE
MEANS
GOOD SERVICE

CITIES SERVICE
OIL CO.
(Del.)

BARTLESVILLE, OKLA.
CHICAGO, ILL.

Other Sales Offices

Cleveland
St. Paul

Kansas City
Toronto



F. B. DUNN

The appointment of Francis B. Dunn as manager of the Houston Works of the A. O. Smith Corp. is announced by W. C. Heath, president.

C. W. Wheatley, who had been assigned temporarily to the task of building up the postwar management of the Houston Works, has returned to the company's Milwaukee headquarters where he will resume his work on the general staff. His activities will include the handling of problems associated with the large materials requirements of the Smith company.

The Houston Works manufactures pressure vessels, liquefied petroleum gas systems, and vertical turbine pumps.

The appointment of Edmund H. Lloyd, of Washington, D. C., as "Janitrol" district sales manager for the state of Virginia, with headquarters in Richmond, is announced by H. C. Gurney, sales manager of the Janitrol domestic-commercial heating division, Surface Combustion Corp., Toledo, Ohio.

Mr. Lloyd, a graduate in business and engineering of the Massachusetts Institute of Technology, has had a wide background of experience in the merchandising of gas-fired equipment. For several years previous to 1942 he served as sales engineer for various gas corporations in the eastern part of the United States, and from 1942 until his discharge in 1946 he served as a major in the office of the Chief of Engineers, U. S. Army, and



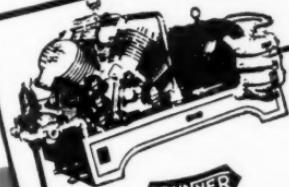
**Empty the
tank...**

**the residual gas
is a large part
of your profits!**

BRUNNER

SINCE 1906

TANK UNLOADING UNITS



**BRUNNER
LP GAS UNIT**

A COMPRESSOR ASSEMBLY THAT WILL PUMP VOLATILE
LIQUIDS AND SALVAGE THEIR RESIDUAL VAPORS

BRUNNER MANUFACTURING COMPANY
UTICA, NEW YORK, U.S.A.

FREE:
This 20 page Guide to
better LP Gas Transfer

Name _____

Address _____

City and State _____

Developed in the early days of the industry and doing a perfect transfer job ever since, it is little wonder that BRUNNER is the most widely recognized and wanted unit for efficient, safe and fast unloading of volatile liquids and gases. Brunner units leave nothing in the tank—retrieve that last 500 to 1000 lbs. of vapors—a self supporting installation.

**BRUNNER
MANUFACTURING CO.**

Utica 1, New York, U.S.A.

Diagrams on piping, wiring
and bottling plus technical
data required by every operator.
Already used to advantage by hundreds. Send for it.

Peerless

Gas Heating Products

**Styled for Beauty
Built for Duty**



Write today for descriptive literature on this complete line that is made to sell, made to last, made to satisfy.

A. G. A. APPROVED FOR ALL GASES

Peerless
MANUFACTURING CORPORATION
LOUISVILLE, KENTUCKY

was in charge of all heating plants of less than 100 horsepower in the United States, which were supervised by that office. Before joining Surface Combustion this fall, Mr. Lloyd was vice president of William E. Kingswell, Inc., Washington, D. C., a distributor of Janitrol heating equipment.



J. G. GUARDIOLA

The LPG Credit Corp., Cleveland, and The Propane Corp., at Erie, Pa.

Prior to his joining The Weatherhead Co., Mr. Guardiola was assistant manager of the public relations department for Phillips Petroleum Co., Bartlesville, Okla., responsible for the advertising of the chemical products of that company as well as handling Philgas retail, wholesale and industrial advertising and sales promotion activities.

R. J. Allison Co., Inc., of Tulsa, Okla., has appointed Tom E. McCutcheon as representative of the company for the state of Missouri.

For the present, headquarters will be maintained by Mr. McCutcheon at Owensville, Mo. He has previously been associated with Owensville Car and Home Supply Co. and with Skelly Oil Co. He will handle LP-Gas and gas equipment.

Butane & Propane

Carter

Producers of high quality
Liquefied Petroleum Gases Since 1931
Wholesale Only

THE CARTER OIL COMPANY
T U L S A , O K L A H O M A



Eagle ^{DE LUXE} GAS RANGES



Quick Sales...with These
"Sweet 16" Features!

1. "Robertshaw" OVEN HEAT CONTROL.
2. Large, Seamless GLASS LINED OVEN.
3. Harper-Wyman Top Burners. Non - Clos. Speedy Action.
4. Top Burners, 10½ x 10½" Centers.
5. 2" THICK INSULATION. Owens - Corning Fibreglas.
6. Reinforced Steel Body Frame.
7. ROLLER - BEARING DRAWER BROILER. Glass Lined Through-out.
8. Heavy RUST RESISTING OVEN RACKS. Non-Tilt, Easy-Sliding, Self-Stopping.
9. Porcelain Enamel Cooking Grids.
10. Porcelain Overflow Burner Tray.
11. Automatic Instant Top Burner Lighting.
12. LOW GAS CONSUMPTION. Insured by Perfectly Fitted Doors.
13. Removable Shelf in Storage Compartment.
14. Flush to Wall Construction. Ample toe space.
15. Chrome Trim Door and Valve Handles.
16. American Gas Association Approved!

Write for Free Catalog
and Prices on the
Complete Eagle Line Today

EAGLE FOUNDRY CO. BELLEVILLE ILLINOIS

YOUR CUSTOMERS WILL WARM UP TO

Premier



Premier—Since 1912



A.G.A. approved for
manufactured, natu-
ral or L.P. gas.



When your customers see this new Premier Vented Heater, you'll start making sales! It is now available in two profit-building models . . . with either 24,000 B.T.U. or 36,000 B.T.U. ratings.

Efficient cast iron burner is easily removed for cleaning if necessary—exclusive with Premier! Raised burner ports provide better combustion—more heat at less cost. Heater is beautifully finished in brown porcelain enamel with chrome trim.

Order the fast-selling 24V and 36V
Premier Vented Heaters today.

Premier

STOVE COMPANY

100 South Sixteenth Street Belleville, Illinois



H. H. PITMAN

Vice President Lee A. Brand, of the Empire Stove Co., Belleville, Ill., announces the appointment of Henry H. Pitman as regional manager of the Dallas and Houston, Texas, territories.

The new Empire manager was formerly Texas representative for the Payne Furnace Co., and is well known in Texas areas. Mr. Pitman has established headquarters in the Koon McNatt Bldg., 1100 Cadiz St., Dallas.

Hugo Wurdack, president of the Automatic Firing Corp., St. Louis, has announced his company's acquisition of the Gemco Air Conditioning Division of the General Engineering and Manufacturing Co., St. Louis. At the same time Mr. Wurdack stated that the extensive plant and facilities of the latter company had been purchased by the Rafco Realty Co. and that Automatic Firing Corp. would occupy a major part of it under lease.

The Automatic Firing Corp. is 18 years old and nationally known as a maker of automatic firing equipment for gas, oil and coal. Included in its line are gas and oil conversion burners and warm-air furnaces for domestic heating; domestic and commercial stokers; conversion burners and warm-air furnaces for liquid petroleum; combination gas-oil conversion burners and forced warm-air furnaces; and liquid petroleum tobacco curers for the tobacco areas.

Officers of the company are Hugo Wurdack, president; Sidney Strauss and James Lee, vice presidents; Evelyn S. Wurdack, secretary-treasurer.

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QUALITY PRESSURE VESSELS



30,000 gal. anhydrous ammonia tank, quality-built by

COMPLETE FACILITIES FOR FABRICATING
PROPANE & ANHYDROUS AMMONIA TANKS
STANDARD AND SPECIAL TANKS
PLATE WORK OF ALL TYPES
THREE PLANTS

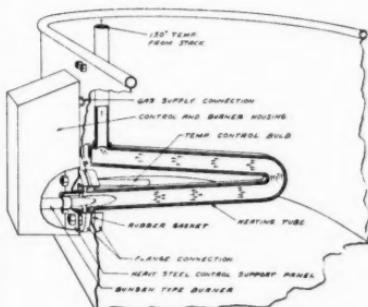


BIRMINGHAM TANK CO.
MAIN OFFICE: BIRMINGHAM, ALA.

Sales Offices at New York, Chicago,
Pittsburgh, New Orleans

FABRICATING PLANTS AT PITTSBURGH, BIRMINGHAM, NORTH BIRMINGHAM AND PASCAGOULA, MISS.

BOOST YOUR PROFITS
WITH THE JOHNSON DEE-ICE Automatic Stock Tank Heater



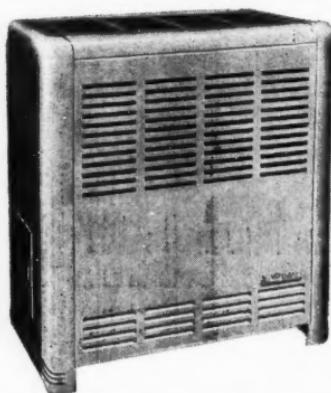
Help farmers to greater returns from beef and dairy herds . . . build profit-able load with the Johnson Dee-Ice. Automatically conditions water to temperature best liked by stock. Keeps tanks open at 40° below zero. Absolutely safe—no danger from electrocution. Burner rated at 10,000 BTU's per hour. Automatic controls adjustable for water temperature 35 to 55°F. Easy to sell, easy to install in galvanized or wood tanks.

List \$84.50 F.O.B. Factory
Standard Discount for Dealers

Write for complete profit-making information.

JOHNSON GAS APPLIANCE CO.
597 E AVENUE N.W., CEDAR RAPIDS, IOWA

Another **MODERN HEATMAKER FOR ALL GASES**



The BRILLIANT FIRE Lowboy CIRCULATOR

Fully enclosed and vented, this console model is a high efficiency Heatmaker. Delivers heat forward in living zone. No sweating. Baffled radiator, built-in draft diverter, Pilot and non-clog burner are features. Sturdy cabinet has baked finish, durable, washable. 3 sizes . . . 20,000 Btu up. Automatic controls optional.

WRITE FOR 1950 BROCHURE



The OHIO FOUNDRY & MFG. CO.
Engineers • Manufacturers • Designers
STEUBENVILLE • OHIO • U.S.A.



T. F. GIFFORD

Ross Evans, president, Chattanooga Implement and Manufacturing Co., Chattanooga, Tenn., announces that T. F. Gifford has joined their organization as plant manager.

Mr. Gifford will be in charge of their greatly expanded production of vented and unvented gas heaters, wall insert heaters, clay back gas heaters, conversion units, gas logs, fireplace furnishings, steel stamping and finishing. "Royal" is the company trade name used for these appliances.

Mr. Gifford is a native of Binghamton, New York. He was with the Norge Division of Borg-Warner for 12 years and was manager of Norge's Chattanooga plant.

Lee E. Rasmussen has joined the sales department of the Prentiss Wabers Products Co., Wisconsin Rapids, Wisconsin, to manage the firm's newly formed liquefied petroleum range division, according to Michael Woolf, vice president and director of sales.

By background Mr. Rasmussen is well qualified for the new position with Prentiss Wabers. From 1931 to 1945 he was associated with the Philgas Division of the Phillips Petroleum Co. in various capacities. He was a salesman at Richfield Springs, New York; sales manager at Hudson, Ohio; and district manager successively at Madison, Wisconsin, and Pontiac, Michigan.

From 1945 to 1949 Mr. Rasmussen was vice president and assistant manager of City Gas Service, Inc., Wisconsin Rapids. During most of this